Master's Programme in Finance

Being good when things go bad – Global impact of COVID-19 on value creation of ESG M&A transactions

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Abstract

This study examines a global sample of 564 merger and acquisition (M&A) deals in the US, Europe and in the Emerging Markets. Using a time period from January 1st 2015 until April 19th 2021, we investigate how and if the market has reacted differently to acquirers announcements in relation to their ESG rating before and during the COVID-19 pandemic. When combining the three global samples we find some evidence of increase in governance score having negative effect during COVID-19, while increase in social score having slight positive effect in the combined sample. Shifting the focus on the three separate samples, we find that 1) in Europe COVID-19 has had negative effect on all three ESG dimensions, 2) COVID-19 has not had any significant effect in the Emerging Markets, and 3) the US having negative governance and positive social score effect. Our biggest contribution in this study comes from providing additional findings in relation to a similar study conducted by Tampakoudis et.al (2021). Our contribution comes from the additional 9 months in our sample period compared to the sample by Tampakoudis et.al (2021) that ends sharply after the March 2020 market crash. With our significantly longer COVID-19 time period, we argue our findings to capture better the whole COVID-19 time, and not just the market crash period.

Keywords CSR, M&A, ESG, CAR, COVID-19, Mergers & Acquisitions, Sustainable Finance, Market Reaction

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Tiivistelmä

Tämä tutkimus tutkii globaalia 564:n yrityskaupan otosta jotka ovat tapahtuneet USA:ssa, Euroopassa sekä Kehittyvissä Markkinoissa. Käyttäen otosperiodia aikaväliltä 01.01.2015 – 19.04.2021, me tutkimme jos ja miten markkinat ovat reagoineet eriävästi yrityskauppojen julkaisuihin ennen sekä COVID-19 pandemian aikana, kun yrityskaupat on luokiteltu yrityskaupan ostajan ESG-luokituksen mukaan. Globaalissa, yhdistetyssä otoksessa löydämme ostajan korkeamman hallintotapaluokituksen (governance score) vaikuttavan negatiivisesti COVID-19 aikana, kun taas ostajan korkeampi yhteiskunnallinen luokitus (social score) vaikuttaisi lievän positiivisesti markkinareaktioon. Keskittyessä yksinään jokaiseen kolmeen otokseen, löydämme että 1) Euroopassa COVID-19 on vaikuttanut negatiivisesti jokaisella ESG-mittarilla, 2) emme löydä COVID-19 vaikuttaneen eriävästi Kehittyvissä Markkinoissa, ja 3) USA:ssa tulokset vastaavat yhdistetyn otoksen tuloksia (negatiivinen hallintotapa, positiivinen yhteiskunnallinen). Tuloksemme tuovat uutta näkökulmaa Tampakoudis yms. (2021). Kontribuutiomme nousee esiin siinä, että käyttämässäme COVID-19 aikaperiodissa on 9 ylimääräistä kuukautta verrattuna Tampakoudis ym. (2021) aikaperiodiin. Pidempiaikaisen aikaperiodin ja sen tuoman eriävien tuloksien myötä argumentoimme omien tuloksiemme olevan relevantimpia mitattaessa koko COVID-19 aikaa, kun taas Tampakoudis ym. (2021) tulokset mittaavat enemmän markkinaromahdusaikaa.

Avainsanat Kestävä kehitys, ESG-mittari, COVID-19, Yrityskaupat, Markkinareaktio

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Abbreviations

CSR	Corporate Social Responsibility
CAR	Cumulative Abnormal Return
EM	Emerging Markets
EUR	Europe
ESG	Environmental, Social and Governance
M&A	Merger and Acquisition
SDG	Seven Development Goals
US	United States of America

1 Introduction

Mergers and acquisitions (M&A) constitute a major strategic decision for firms and may significantly affect shareholder value (Tampakoudis et.al., 2018). M&A transactions motives are based on assumption that the combined value of the company is higher than the two companies alone (Mirvis and Marks 1992). The reasoning is intuitively easy to comprehend as combined companies can enjoy many benefits that two separate ones may not, such as economics of scope and scale. As the world has become more interconnected through globalization, companies have more acquisition targets to choose from; di Giovanni (2005) found global cross-border M&A transaction activity more than triple itself from year 1990 to year 1999, while Institute for Mergers, Acquisitions and Alliances (IMAA) found value of all M&A transactions almost tenfold during the same time. As the deal activity has stayed relatively the same to this day from year 1999, this should mean that shareholder value has increased significantly through combining more and more companies. However, this has not been the case, as research has found that on average the acquiring company does not seem to create value for its shareholders (Yaghoubi et.al., 2018, among others). While this may be true, some transactions do create value for acquirers as well, and finding the factors affecting positively to post-transaction value creation are in great interest of researchers.

Investing based on addressing environmental, social and governance issues has experienced considerable growth in the last few decades due to widespread concerns regarding the future of our society. In the same time enterprises have vigorously put resources into corporate social responsibility (CSR) in order to provide positive impact on society. Simultaneously, these activities might be motivated by enhaned corporate image, shifting the interaction with stakeholders, and strengthening investors' confidence (Yen and André, 2019). However, some might argue that investing in profit maximizing actions and resources produce the most good for society, and thus putting resources into noble CSR-related actions can actually cause harm for the company and society. But can CSR-related investing be profit maximizing as well, or are the investors and companies putting effort to addressing "greater good" just acting irrationally that should be stopped? Similar implications can be transferred into M&A activities; if an acquiring company has put resources into CSR-related activities, do investors believe they have created the most value for its shareholders in the past, and should use its funds to acquisitions rather than maximizing its operations? The answer seems to be the former; Aktas et.al. (2011) find

that the stronger the target's environmental, social and governance performance rating (also known as ESG rating), the higher the abnormal returns are for the acquirer company.

The currently ongoing COVID-19 pandemic triggered a severe economic crisis around the world; During the first quarter of 2020, the S&P lost more than 30% from its peak in mid-February, while the increased uncertainty caused significant volatility in the stock prices of firms across all business sectors (Tampakoudis et.al., 2021). IMIAA statistics (2020) also find 2020 worldwide M&A deal activity and deal value to decrease from previous year. COVID-19 pandemic, this previously unseen event by our generation provides interesting new viewpoints for M&A transaction motives and value creation. Do investors still believe that high ESG scoring acquirers are in a position to acquire companies during a times of social and financial crisis? Or has the CSR-related investments been the byproduct of economic growth, and now the companies with expensive CSR investments deemed unsuitable to usher funds away from core operations through acquisitions?

Our initial reasoning for studying the COVID-19 impact on ESG M&A transactions was our initial feeling regarding the possibility that the pandemic brings out the irrational fundamentals that the market has towards CSR. Similarly to Internet bubble, investors and companies may suffer from overinvestment on highly rated ESG companies due to its current popular stature. As economic uncertainty has now increased, this overinvestment hypothesis might prove to be true as investors transform their viewpoint more on "flight to quality". Flight to quality refers to herd-like behavior of investors shifting their assets to lower risk assets during times of economic downturn. This could mean shifting from CSR-related assets to possibly safer assets. However, environmental, social and governance performance score of firms is seen by some as an important resilience factor during a period of increased economic uncertainty (Albuquerque et.al., 2020; Demers et.al., 2020). This has been true in previous crises; during the 2008 financial crisis, Lins, Servaes, and Tamayo (2017) found significant overperformance from companies with high ESG rating. This should indicate that high ESG rated companies are indeed safe assets during times of crisis. However, as COVID-19 differs from 2008 financial crisis in being an exogenous shock (Hasan et.al., 2020), and thus the reaction on acquirers' ESG rating might be completely different.

When conduction our first research on the related literature, we found Tampakoudis et.al. (2021) conducting similar study using a US data between January 2018 and July 2020. They

found that there seems to be a significant negative value effect on ESG performance for the shareholders of the acquiring firms, and the effect appears to be stronger during COVID-19 time period. Tampakoudis et.al (2021) had hypothesized similarly to us that overinvestment could be the main contributor to these findings. Motivated by this study and the severe lack of other similar studies published, the study by Tampakoudis et.al. (2021) became our main influence for our own study.

But as the COVID-19 pandemic is a global crisis affecting the whole world significantly, we found it to be most relevant and value-adding to produce a study with global scope. In order to test the effect of this global crisis, we use a sample period starting from 1st of January 2015 and ending in 19th of April 2021. We use three different datasets comprising of global focus by extracting completed mergers from United States of America (US), Europe (EUR) and Emerging Markets (EM). With these three datasets, we obtain data from over 30 countries in five different continents in a timespan of over five years. We believe this scope is sufficient for global scope, but also for extracting the cultural, social and economic differences, among others, between the selected countries that can provide valuable insight into how ESG M&A transactions have been affected differently across the globe. We believe the most relevant differences regarding our subject will be a) the difference in regulation, corruption and attitude towards CSR, and b) the difference in development and sophistication of the financial markets.

We investigate the effect of acquirers' pre-merger CSR performance on market reactions to M&A announcements by using univariate, simple multivariate and multivariate analyses (Yen and André, 2019; Tampakoudis et al. 2021). By means of univariate analysis, we compare the cumulative abnormal returns between firms with high ESG rating and firms with low ESG rating. Firm is considered to have high ESG rating if it has a ESG rating above the 75th percentile, and low ESG rating if it has ESG rating below the 25th percentile. In simple multivariate analysis section, we regress the acquirers' cumulative abnormal returns against the main variables of interest; environmental score, social score, governance score and COVID-19. In multivariate analysis section, we regress the acquirers' cumulative abnormal returns against the main variables of interest; environmental score, social score, governance score, COVID-19 and a set of control variables that have been proved to affect the gains of acquirers. Furthermore, we focus our analysis on the effect of CSR performance of acquirers' gains on the periods before and during the pandemic.

Our main contribution with this study can be divided into two separate sections. Firstly, we use a combined dataset not previously used for studying ESG M&A transactions during COVID-19 in the time of writing. To add, we were unable to find any published research that uses either Europe or Emerging Markets as selected dataset in the topic in question. With this in mind, we are able to shed some new light into M&A landscape, which we believe is a significant part of financial system that should be as developed as possible in order to prevent value loss during times of crisis.

Secondly and most importantly, while also using a US dataset, we provide additional insight into the study conducted by Tampakoudis et.al (2021). The major additional insight comes from the fact that our timeline that ends in April 2021 provides almost an entire additional year of COVID-19 timeline from the Tampakoudis et.al (2021) study that ends in July 2020. What makes this significant is that the Tampakoudis et.al (2021) timeline mostly captures only the market crash and the decrease in M&A deal activity that the COVID-19 started in March 2020. They are unable to capture majority of the recovery phase and the significant increase in M&A deal activity back to its pre-COVID-19 levels that started during July 2020. Because of this, it is reasonable to expect that the negative results Tampakoudis et.al (2021) captured in their study can differ significantly in our study. Also, while Tampakoudis et al. (2021) test using grouped ESG score indicator (named CSR in their study), we also test using each individual dimension that ESG score comprises of; social, environmental and corporate governance score. We believe this way we can find more detailed findings in our study as this way we know how each individual ESG dimension affects the market reaction.

Our main findings are the following; in the combined sample (known as All samples), we find evidence of increase in corporate governance score having negative effect during COVID-19, and slight positive effect regarding increase in social score. These results are statistically significant in two out of four announcement event windows, and also in our single multivariate event window (-3, 3) when controlling for other variables. We argue that the negative corporate governance score is due to highly governed companies being too conservative in their risk-taking behavior, failing to capitalize on potential misevaluations in the market. The positive effect on social score could be based on stakeholder theory; socially responsible acquiring company is met with positive reaction more stakeholders are willing to put resources in the company (Freeman et al., 2004; Jang et al., 2019; Lee, 2008). We don't find any significant results in environmental score in the combined sample.

Shifting focus on each of the three individual datasets, in our multivariate analysis we find significant negative effect in all three of the ESG dimensions in Europe. Surprisingly it seems that COVID-19 has had the most negative impact in Europe, the most developed and positively minded continent in terms of CSR-related actions. This could be due to cost-benefit concerns of investors relating to shareholder theory rather than shift in importance of sustainable future. CSR-related actions may be seen as too expensive to execute and maintain during times of crisis, and thus companies with high ESG scores that are using capital to acquire companies during COVID-19 are seen as wasting capital that should be used stabilizing the company during times of crisis. However, the robustness of the results could be questioned for two reasons. Firstly, the results are only found in the multivariate analysis done with one event window (-3, 3). Secondly, for some reason most of our European samples' acquisitions in 2020 are announced post-March 2020 market crash (April 2020 – June 2020), and thus the investor sentiment towards all acquisitions might be more negative during that time after the market crash, biasing the results.

In the Emerging Markets sample, we do not find any significant effect caused by COVID-19. In our visual evidence regarding all sample acquisitions, it seems that investors react positively towards all kinds of acquisitions regardless of the ESG rating. Quite surprisingly due to potential for having the highest negative effect caused by characteristics like high volatility and information asymmetry (Saksiriruthai, 2019), the Emerging Markets are the least influenced by the pandemic crisis. But as with the European sample, it should be noted that the robustness of results could be questioned as the conducted sample is quite limited due to inability to obtain variable data compared to the other two samples.

Lastly, the results found in the US provide some questions regarding the relevancy of the findings by Tampakoudis et.al (2021). We find negative corporate governance score and positive social score effect in some event windows. It seems that when using a longer COVID-19 time period, the negative effect found by Tampakoudis et.al (2021) is diminished as the March 2020 market crash is a smaller part of the whole sample period.

We argue that the most prominent reason for the results especially found in Europe is due to the shareholder theory and the cost-benefit concerns of investors. Because of this, the real investor sentiment towards ESG assets may not be obtained in our study and could be examined further. Finding if the amount of funds towards ESG assets have decreased or if the number of

high ESG scoring M&A transactions have decreased during COVID-19 could provide more evidence regarding the investor and acquirer sentiment. Focusing studies towards other main variables that could provide evidence of cost-benefit concerns could also be relevant to examine in the future. However we believe our study and results provide indication towards ESG M&A transaction pre and during COVID-19 era, and we believe our findings to stay relevant in the future when discussing the COVID-19 impact on mergers and acquisitions.

The structure of the study is the following. After this section, we will first explain and motivate the reader regarding why ESG, COVID-19 and mergers and acquisitions are relevant to combine, after which we will provide explanation why using a global sample can provide differing results and key insight in the subject. After that based on the literature review and our interpretations, we hypothesize the key potential findings in our study. Thirdly, we will show in great detail our extracted data and used methodology influenced mostly by Tampakoudis et.al (2021) and Yen and André (2019). Following that we will conduct and present the results found, summarizing and discussing them at the end. Lastly, we conclude our study and discuss the potential future implications our study provides and what could be examined further in the future.

2 Literature review

2.1 Fundamentals of mergers and acquisitions and motivation for ESG transactions

Mergers and acquisitions (M&A) is a general term describing an action of companies or assets consolidating through various types of financial transactions. M&A is a major strategic decision for companies from multitude of reasons, however the main reason behind M&A activity comes from one key company goal, the goal of increasing shareholder value. This goal has received a lot of attention in financial literature, and primarily research indicates that M&A deal on average actually does not actually create value for the acquiring firm (Yaghoubi et.al., 2018). The main motivation for mergers and acquisitions to be value destroying for the acquiring company comes from the premiums that the acquirer has to pay in order to gain the acceptance of target company shareholders. This premium paid means a transfer of wealth from acquiring company's shareholders to the target firm's shareholders, which should be reflected in the share prices. This has been widely documented in the past; for example Jensen and Ruback (1983) report average cumulative abnormal returns in the 20-30% range for the target company, while stated above, Yaghoubi et. al. (2018) find slight negative returns for the acquirer.

Even if an average M&A transaction does not create value for the acquirer, there are many characteristics that have been found to lead to positive value creating M&A transactions for the acquirer. These characteristics can include specific industries (Kim and Canina, 2013), transactions in a same industry (Bruner, 2005) or difference in transaction payment method (Boone, Lie and Liu, 2014). Because of this, finding a secret formula for value creating M&A transaction has been in high popularity in the financial research. One of the research topics that has seen a lot of popularity in the last decades are acquisitions based on acquiring company's pre-merger corporate social responsibility (CSR) performance. This performance is usually quantified using a rating system that measures company's long-term resilience in the fields of environmental, social and corporate governance performance, also known as ESG rating. The main reason for the current popularity of ESG M&A transactions is the widely researched fact that ESG M&A transactions are value enhancing for the acquirer. Aktas et.al. (2011) for example find that the stronger the target's ESG performance, the higher the abnormal returns for the acquirer are.

In M&A transactions ESG ratings used as a way to proxy the company's culture. Environmental criteria examine company's operations and its effects on sustaining nature, while social criteria examine company's relationships between its stakeholders. Governance deals with company's executive decisions, such as internal control, management pay, auditing and shareholder rights. The term was firstly used in United Nations (UN) report in 2004 with the goal of influencing financial markets towards more sustainable development (United Nations, 2004). The ESG rating of an acquiring company is crucial due to the fact that the society is trending towards companies having to meet the goals set for the long-term wellbeing of our planet. For example, the launch of the 2030 Agenda for Sustainable Development, and the adoption of seventeen Sustainable Development Goals (SDGs) which represent a "shared vision of humanity and a social contract between the world's leaders and people" (Ban, 2015) have resulted into companies investing heavily towards more sustainable operations. Additionally, as investors and other stakeholders alike have also accepted the goals for sustainable future, one could argue sustainable actions being more part of many investors' decision making currently.

In relation COVID-19, there seems to be some indication that high ESG rating of a company during times of crisis helps to outperform in the market. Lins, Servaes, and Tamayo (2017) found significant overperformance from companies with high CSR rating during 2008 financial crisis. They explain their findings by stakeholder theory; during times of crisis or other negative occurrence, stakeholders reward companies doing good for others by loyalty and support. Simultaneously during market crisis, regulations towards brown assets, assets that are harmful for our planet, are more likely to increase, and investors discount the probabilities of changes in regulation (Ilhan et.al., 2020). This leads to transfer of wealth from brown assets towards green assets, thus supporting high ESG performance and positive value creation for acquiring company.

However, there is also the possibility that due to the popularity of the CSR performance in the recent years in the market, the high ESG scoring assets are overvalued in the market. This overinvestment hypothesis motivated the results found by Tampakoudis et.al. (2021), who found overall negative value effect of ESG during COVID-19 pandemic. They argued that the market considers sustainability activities to be too costly during a time of economic downturn, and thus reward low-ESG acquiring firms. This argument supports a shareholder theory for which Milton Friedman (1970) famously popularised the view that "the social responsibility of business is to make profit". While politically conservative view, this idea still holds in the

modern economic theory and can still be seen as company's way to produce the most value for them and for the whole society. This theory contradicts with the stakeholder theory that explains the reasoning behind company possessing high ESG rating outperforming during times of crisis. These two theories are the main agency problems behind the ESG M&A transactions, and we discuss them in more detail next.

2.1.1 Stakeholder theory

According to stakeholder theory (Freeman, 1984), firms should consider the effects of their actions upon various groups having an interest or a stake in the corporation. Firms build relationships with stakeholders by providing the necessary resources to satisfy their interests. As a result, stakeholders are more willing to contribute resources and effort to the firm, which, in turn, increases shareholder value (Freeman et al., 2004; Jang et al., 2019; Lee, 2008). Thus, in high ESG firms, the interests of shareholders and other stakeholders are in greater alignment and should result into higher contribution of resources. Additionally, CSR policies can also lead to better communication between insiders (i.e. managers) and outsiders (i.e. stakeholders), mitigating potential conflicts of interest, which is consistent with the conflict resolution hypothesis (Jo and Harjoto, 2011). Other benefits include better retention of high-quality employees (Greening & Turban, 2000), higher operational efficiency, product quality (Johnson & Greening, 1999), increased customer loyalty (Sen and Bhattacharya, 2001) and easier access to external financing (Lins, Servaes and Tamayo, 2017). These are company qualities that should improve the operational, and thus most likely the financial situation and stability of the company. Because of this, the acquisitions by high ESG rating firms should be more justified, less risky in terms of acquirers' future, and thus should be met with more positive reaction.

Limitation for this theory can be seen from the fact that one could also see CSR-related actions being motivated by maximization of the firm value, with the contribution for other stakeholders being just the byproduct from it. The reasoning for this is that doing environmentally and socially responsible actions is currently popular in the media and our society. In the M&A landscape, the acquirers with high ESG rating might acquire with the motive of empire building. This is done by capitalizing on their current positive image in the market rather than finding a target company that would improve its operations. While in itself these motives do not dismiss the theory, the possibility of being environmentally and socially conscious company is just a trend in our society can produce harmful long-term effects. Comparable phenomenon in the past is the Internet bubble in the late 1990s, when all kinds of institutions had significant herding

behavior towards internet stocks (Singh, 2012). While almost certainly such significant economic downturn would not be replicated, a crisis like COVID-19 pandemic could result into emergence of similar characteristics that could result into “ESG bubble”.

2.1.2 Shareholder theory

Contrary to stakeholder theory, shareholder theory proposes that the only main goal of a firm is to increase the wealth of shareholders (Friedman, 1970; Jensen, 2001). By serving the interests of stakeholders, firms waste financial resources at the expense of shareholders. This results into a transfer of wealth from shareholders to stakeholders (Deng et al., 2013). Because of this, even if the investment to CSR related actions would provide collective good to the society, the nobility does not justify the value transfer and destruction by the company in question. The value destruction part comes from the concern of shareholders that transfer of wealth happens in the benefit for other stakeholders, and thus add it to their valuation, which results into lower market value. The value of the company participating in CSR-related actions would thus be lower than the company that does not participate. This would mean that the market reaction would be more negative for high ESG scored transactions than for lower scoring ones. This supports the findings of Tampakoudis et.al. (2021) that found negative results for high-ESG acquirers, and positive implications for low-ESG acquirers.

The capitalization on CSR trend raises the next concern. If companies participate in CSR-related actions with motives of exploiting current trends, the reasoning by company from financial standpoint might be left for lesser inspection, or even be excluded. The CSR trend capitalization might not even come from company’s viewpoint, but rather from individual’s; Barnea and Rubin (2010) along with Buchanan et.al., (2018) find that managers are often willing to overinvest in CSR-related activities in order to enhance their own reputation. In addition to the money invested the manager will invest her time on these CSR-related actions, focusing her time away from company’s core, value creating activities. Especially in COVID-ravaged landscape focusing on CSR-related activities might be met with even more negative reaction due to higher operational risk in most of the industries. De Vito and Gomez (2020) discuss the risks as well; due to the spillover effects of COVID-19, the average firm is expected to face dramatic difficulties regarding short- and long-term liquidity. Thus, based on shareholder theory, a decrease in social and environmental projects may be necessary in order to lower costs, increase cash balances and improve financial performance (Tampakoudis, Noulas, Kiosses and Drogalas, 2020). This would also indicate a translation in M&A transaction reactions when it

comes to high ESG scored companies. Based on shareholder theory, high ESG scored transactions should see, more negative market reaction, and thus, less value creation for investors.

2.1.3 Cost concerns as a motivation for value creation

There is also a possibility that the market reaction captured by ESG performance does not fully reflect market sentiment regarding ESG rating of the acquirer. Following Yen and André (2019), they state that the effects of CSR on M&A performance depend mainly on cost-benefit concerns of investors. The costs Yen and André (2019) discuss about are mainly about agency costs between shareholders and management. The cost-benefit concerns of CSR actions are most likely even more prevalent during the COVID-19 pandemic. At the start of 2020 the outbreak of the pandemic-driven crisis caused a revenue shortfall for firms, which also had to deal with a contraction in credit supply from banks (Hasan et al., 2020; Li et al., 2020; Singh, 2020). In order to increase liquidity and preserve financial stability, firms might need to cancel CSR-related investments. Acquirers with high ESG rating focus significant amount of their assets on CSR related activities already, and conducting acquisitions when the funds should be used for financial stability are deemed extra risky. Thus, high-ESG acquirers are met with negative announcement reaction and destroy shareholder value during COVID-19. What this implies is that the market reaction does not fully reflect investors' opinions on CSR-related actions per se, but rather their desire to protect their investments. This motivation can be implied to any other category that is not based on core operations of the company, such as charity work or political activism. Because of this there is not clear indication if investors prefer company with high or low ESG rating, but rather the preference of protecting their investments. This motivation would diminish the results found from previous, and potentially from our study.

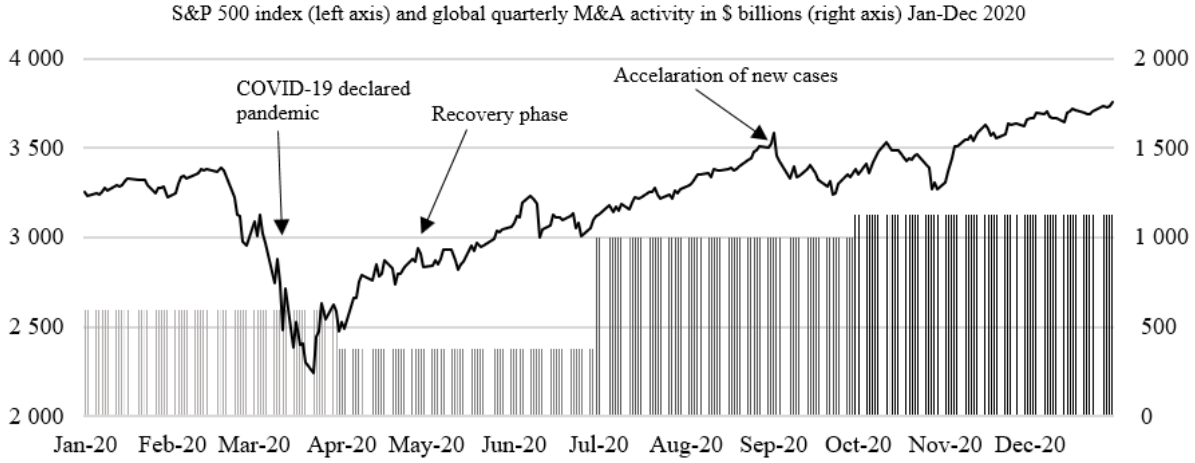
2.2 Basic knowledge of the COVID-19 pandemic

2.2.1 The impact of COVID-19 on the financial markets

Coronavirus disease 2019, known as COVID-19, COVID or coronavirus, was first identified by Wuhan Municipal Health Commission in China during the end of December 2019 (World Health Organization, 2020). One month after, pneumonia cases were found already in 18 different countries. On March 11, 2020, the World Health Organization (WHO) classified coronavirus (COVID-19) as a global pandemic after affecting more than 100 000 people in over 100 countries, having killed thousands (Albulescu, 2021). As of May 25th, 2021, WHO has reported a total of 167 252 150 cases globally.

During March 2020, when COVID-19 was declared a pandemic, the global financial markets responded dramatically to the events. On March 12, the S&P 500 dropped 9.5%, the steepest one-day fall since 1987.[1] FTSE, the UK's main index also suffered its worst day since 1987, dropping more than 10% that same day.[2] Responding to this crisis the Federal Reserve (FED) announced on 23rd of March 2020 a zero-percent interest rate policy and unlimited quantitative easing program. Simultaneously the mergers and acquisitions markets plummeted; by the end of March 2020 M&A levels in the US fell by more than 50% compared to 2019 in the first quarter to $253 billion (Harroch et.al., 2020). Mergermarket (2020) also reported that after nearly ten years of growth, global M&A activity was down by 39.1% by value during first quarter of 2020 compared to 2019 one.

Figure 1. S&P 500 index and global M&A activity development during 2020



However, the S&P 500 rallied nearly 25% from a low the low points of March already during April 2020 (Figure 1). Main reasoning for that was the improved outlook on the COVID-19 outbreak, with the number of daily cases slowing and falling from March 2020. This quick fall and rally of financial markets during a space of two months showcased the volatility of the market. After a summer of more stabilized situation, the number of cases started to rise tremendously during the fall season due to third wave in the COVID-19 pandemic, ending the year with the US seeing more than 200 000 cases per day. Despite the unprecedented number of cases, S&P 500 and FTSE, among other indexes, continued an upward trend, contrary to the

[1] https://graphics.reuters.com/USA-MARKETS/0100B5L144C/index.html
2 https://www.bbc.com/news/business-51829852

March 2020 events (Figure 1). Contracting market reaction from the spring season, motivated by positive news regarding vaccine development, translated to M&A activity as well. Mergermarket (2021) reported that the final quarter of 2020 witnessed highest quarterly value since second quarter of 2007, with $1.2 trillion announced.

While still continuing, the COVID-19 pandemic has seen the markets experience extreme volatility in unprecedented circumstances. In order to understand the current situation better and its possible consequences in market characteristics, we need to take a closer look at comparable events that have happened in our society in the past and the market reaction during that time.

2.2.2 COVID-19 and the 2008 financial crisis

When current generation thinks of similar events to the COVID-19 pandemic, many focus their attention towards the 2008 financial crisis. There are clear similarities; both crises caused a dramatic stock market crash, a massive spike in economic uncertainty and a recession in the global economy (Baker et.al., 2020, among others). Even the famous words, "Whatever it takes" by former European Central Bank (ECB) President, Mario Draghi, have been repeated by British Chancellor of the Exchequer Rishi Sunak when talking about reinforcing financial markets (Partington and Mason, 2020).

However, there are clear differences between COVID-19 and the financial crisis that may not make them as comparable as one might imagine. Hasan et. al. (2020) state that COVID-19 shock is purely exogenous to the global economy, similarly to other natural disasters as floods, earthquakes, health crises, wars, terrorist attacks or other unexpected events. 2008 financial crisis on the other hand was an endogenous shock, caused by deregulation of banks and accelerated by US housing market that spread across the world. While the 2008 financial crisis was dependent on economic factors, COVID-19 crisis has dependence on non-economic factors, making them more difficult to compare.

Even with the established differences, studying the financial crisis can result into interesting discoveries. Using the efficient-market-hypothesis, the financial markets should have obtained some learnings from the 2008 financial crisis that are utilized in the current COVID-19 crisis. Lins et.al. (2017) found US non-financial firms from with high ESG scores to have better financial performance than those with lower ESG scores from 2008 to 2009, indicating that high CSR performance has positive effect during times of crisis. Using a wider timeline of 2007 to

2016, Hoang et. al. (2020) provides a contradicting finding; there seems to be negative relationship between environmental transparency and financial performance during the financial crisis.

But as mentioned before, using the 2008 financial crisis as the only comparable event to COVID-19 pandemic provides limited insights. Because of this, we have to observe other exogenous events more similar to COVID-19 pandemic.

2.2.3 COVID-19, SARS and the Spanish flu

Despite the current despair, our society has seen similar pandemics in the past. Dating back some hundred years during the last year of World War 1 an earlier pandemic named as the "Spanish flu" spread across the world and has been believed to have caused over 50 million deaths worldwide, with the US death rates being 5-20 times higher than expected under typical seasonal influenza (Burdekin, 2020). Burdekin (2020) finds that European and US stock markets reacted significantly, and negatively, to the surging death rates seen during the Spanish Flu, while on the other hand Barro, Ursua and Weng (2020) find no significant effects of the flu deaths on realized real returns on stocks, but significant negative effect on short-term government securities. While, as Burdekin acknowledges in his study, the significant on-going wartime pressures have to be taken into consideration when comparing the times during the Spanish Flu and COVID-19, and similar results may not translate to COVID-19 when comparing similar assets. Also, if one believes in efficient markets or even semi-efficient markets, the information from the Spanish Flu should be reflected in the assets as of now and the effect should be, at least, less significant.

As the Spanish flu took place some hundred years ago, the data from the financial landscape for M&A transactions is rather limited. In order to understand similarities in the M&A market, we take a look at SARS epidemic in China that lasted from November 2002 until August 2003. SARS, similarly to COVID-19, has been presumed to have its roots in China, but the difference comes from SARS being mainly isolated in China. But despite the shorter time period, SARS created similar fear as COVID-19, especially due to higher fatality rates; for example in the midst of the crisis in May 7 2003, World Health Organization (WHO) estimated fatality rates of 14-15% (World Health Organization, 2003). Zhang, Kandilov and Walker (2021) studied China's M&A transactions during the SARS epidemic. Using transaction level data on M&As from 2002 to 2005, they find that the provinces in China that experienced high level of infection rates also suffered a significant decline in M&A activity, both in terms of transactions and

overall volume. The effect was negative especially for non-state-owned companies. They also find that the negative effect disappeared as the epidemic ended, but they find no reallocation of deals over time, meaning that some of the deals are not simply delayed, but lost entirely. As the ongoing COVID-19 has turned into worldwide pandemic, the negative effect might even be stronger due to larger spillover effect.

2.3 Datasets, ESG and implications for M&A performance

We focus on three datasets; the Emerging Markets (EM), the US, and Europe. This enables a comprehensive view on pandemic with global influence, but also allows us to distinguish if COVID-19 has had different impact in some parts of the world. The possibility for difference in impact is due to the dissimilarities in political, cultural and geographical characteristics, among others. We argue this to translating into different views regarding the importance of CSR performance and company ESG rating. For example, Environmental Performance Index 2020 (EPI) ranks only European countries in their top 10, while India, part of Emerging Markets dataset, ranks 168th out of 180 countries. This shows the differing level of importance that ESG rating has between the datasets. Additionally, the financial markets between the datasets are not similarly developed, which might also result in different market reactions. We will discuss these differences next in more detail.

2.3.1 Emerging Markets

Countries are classified as being part of Emerging Markets if they have characteristics of developed market but do not meet all characteristics.[3] These characteristics include active globalization process and high investment activity of foreign investors, but also poorly developed capital markets, macroeconomic instability leading to significant volatility of financial assets as well as high political risk and poor information transparency (Saksiriruthai, 2019). This should result into higher negative shocks in times of crisis due to high volatility and poor market development.

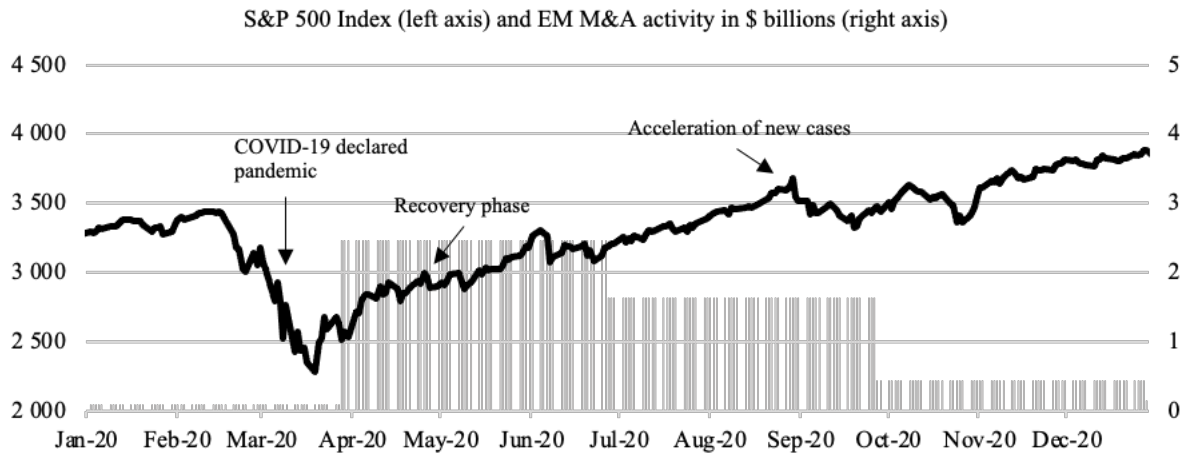
However, companies from Emerging Markets have started to extend their geographic reach and competitive advantage by increasing the number of M&A investments (Sun, Peng, Ren & Yan,

[3] Emerging Markets (EM) countries include: Brazil, China, Greece, India, Israel, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, South Korea, Taiwan, Thailand and Turkey

2012). While the reaction should be, on average, a negative one due to average M&A transaction being value destroying, if most of the focus in M&A has been done by high ESG acquirers, the reaction could be positive in pre-COVID world due to the possible value creating attributes discussed previously. However La Porta et. al. (1998) have found firms that perform socially responsible actions in the Emerging Markets are often owned and controlled by particular families or controlling shareholders. Companies with highly concentrated ownership might want to limit the participation in high costing socially responsible actions due to higher cost-benefit concerns. But, if these companies do participate in the CSR actions, the benefit of the actions should be higher than normal CSR action as it has gone through more scrutinized screening due to higher cost-benefit concerns. Because of this, these news, like for example an acquisition by a company with high ESG rating, should be met with positive market reaction. However, as there is a higher amount of information asymmetry in the Emerging Markets, this information fails to be interpreted correctly by other investors. Investors with agency concerns should also have pessimistic expectations for CSR participation who believe these actions solely benefit the majority owners, contrary to stakeholder theory and consistent with shareholder theory (Yen and André, 2019).

In Figure 2 one can see the M&A activity in our sample during 2020 in the Emerging Markets, with the S&P 500 index providing context regarding the financial development in the market. Interestingly, the activity has increased after the March 2020 crash. This could be due to the acquirers' findings potential misevaluations in the market immediately after the crash and trying to benefit from it by acquiring undervalued targets. More importantly if done by high ESG scoring acquirers, this could also be a signalling effect. Acquirers with high ESG rating indicate that their financial position is stable enough to acquire a company, and despite the expensive CSR-activities they have found a target that enhances the company's future. If this is the case, this should be met with positive market reaction. However due to high information asymmetry in the market (Saksiriruthai, 2019), this fails to be signaled correctly to the investors with already high agency concerns. Thus, we argue this timing of M&A activity to be even more value destroying.

Figure 2. S&P 500 index and our EM sample M&A activity development during 2020



2.3.2 United States of America

The US has enjoyed one of the largest and most developed financial markets in the world, and most of the ESG M&A literature are based on US data; as discussed Tampakoudis et. al (2021), finding that US based acquirers were associated with negative value effect of ESG performance for the shareholders of the acquiring firms during full sample period of 2018 to mid 2020, with stronger negative reaction during COVID-19 crisis. We believe there are three main reasons behind the negative results found by Tampakoudis et.al. (2021):

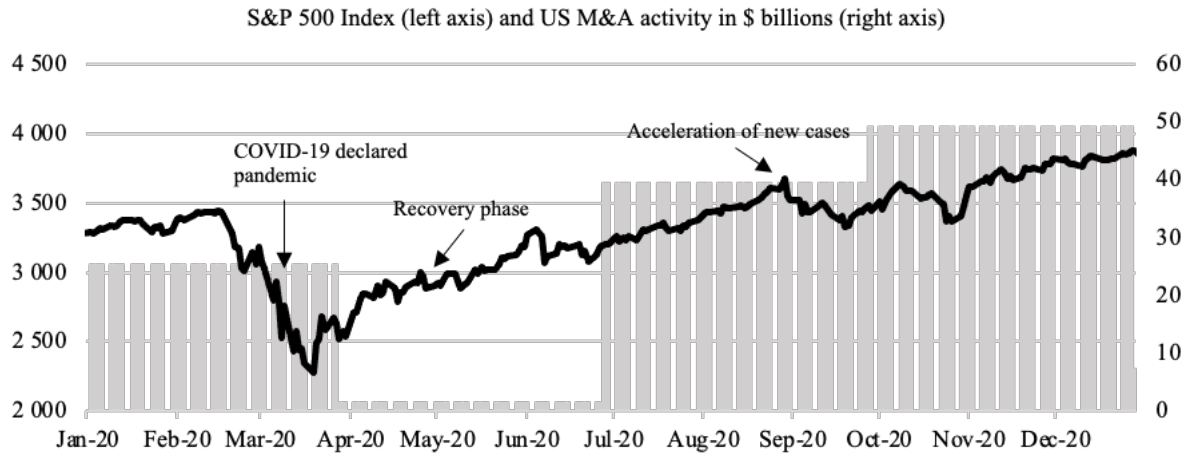
a) The market reaction is based on cost-benefit concerns of investors, believing that the money spent will not be met with higher amount of money gained. (Yen and André, (2019), Tampakoudis et.al., (2021))
b) The presidency of Donald Trump between 2017 and 2021, which saw an implementation of ecologically harmful laws which benefitted planet damaging assets called as brown assets, resulting into possible transfer of wealth from green assets to brown assets
c) The sample period ends in July 2020, taking into consideration the decrease in M&A activity during 2020, but not the recovery phase and the enjoyed record high Q4 in 2020 (Figure 1)

With a longer sample period from both ends might provide different results, especially after failed re-election campaign of President Trump and the appointment of Joe Biden as the 46th president of the United States from January 2021. Presidency of Joe Biden has already resulted into US rejoining to the Paris Climate Agreement, which should result into possible re-transfer

of wealth from brown assets to green assets in the US. This could imply that the US based ESG M&A transactions are met with more positive market reaction and thus should diminish the negative effect found by Tampakoudis et.al (2021). However, the importance of ESG is not as prevalent as in for example in Europe.

In Figure 3 we have provided year 2020 M&A activity from US in our sample. Interestingly and as expected, in our sample the M&A activity has reduced significantly after the marker crash and the initial recovery phase. This most likely is due to acquirers postponing the activities because of more conservative investor sentiment, something the acquirers' in less developed Emerging Markets may have failed to copy. The activity has also increased in the last two quarters of the year, timeline Tampakoudis et.al (2021) did not capture.

Figure 3. S&P 500 index and our US sample M&A activity development during 2020



2.3.3 Europe

European markets provide a mix of characteristics from EM and US markets; while European financial markets are, on average, seen as developed, they comprise of multitude of countries which is one of the reasons why European countries have cultural, political and geographical characteristics that the US don't possess.[4] Also, with strong financial integration in Europe

[4] Europe (EUR) countries include: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, Ukraine, United Kingdom

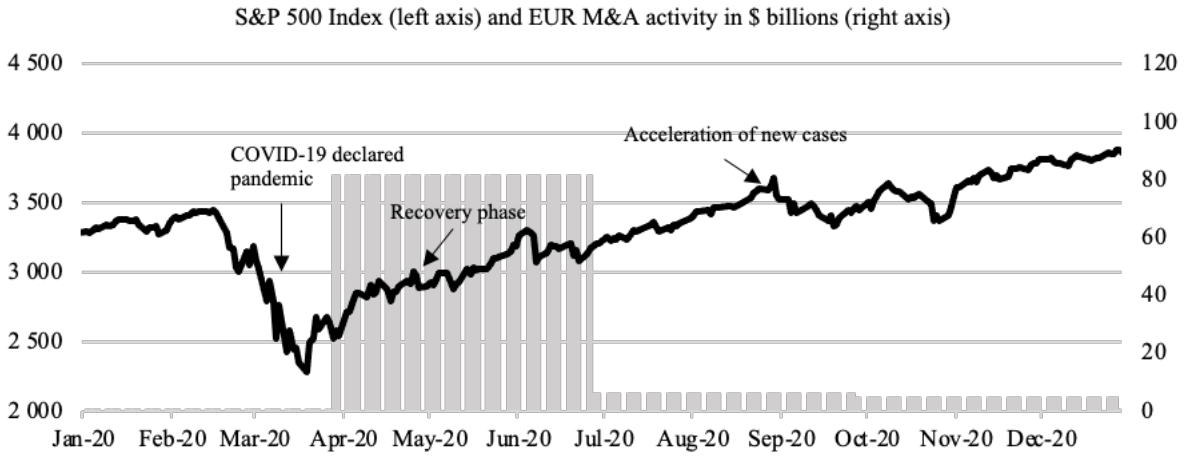
compared to the EM due to European Union means that while the countries are individuals, the decisions inside Europe have wider impact around the continent than in the Emerging Markets, which typically are spread geographically around the world.[5] For example the Brexit shock in 2016 can be seen impacting UK greatly in terms of economic political uncertainty, but for example France followed a similar trend to UK during the time period (Economic Policy Uncertainty Index, n.d.). This could mean that due to the spillover effect, the effect of COVID-19 could affect the whole dataset with higher degree, being it a positive or negative effect.

However European Union and its actions have other, positive effects towards ESG transactions; objectives of the European Green Deal courage direct investments towards sustainable projects and activities. Similarly, the current COVID-19 pandemic has reinforced the need to redirect capital flows towards sustainable projects in order to make European societies resilient against climate and environmental shocks and risks (European Commission, n.d.). Because of this, acquirers with high ESG rating might be applauded by investors, and investors could even be directed towards these acquirers by political views and actions. Other reasons for expecting a positive market reaction in the European markets are the fact that Europe is the region with greatest share of funds that are managed to responsible investment criteria (GSIA Report 2018) and seven out of ten highest ranked countries in terms of social progress are European (Social Progress Imperative, 2020).

In Figure 4 one can see European M&A activity in our sample during 2020. To our surprise most of the acquisitions in 2020 were for some reason done during April 2020 – June 2020, the aforementioned post market crash time. It should be clarified that this is the case only the acquisitions done in 2020, and not in our whole 2015 to 2021 sample. There is no clear explanation for this phenomenon, and the robustness of the 2020 sample could be argued. This grouping of the M&A activity might result into more negative results than a more dispersed activity sample as most of the deals are announced after the March 2020 market crash.

[5] Depending on the selected countries for Emerging Markets; no specific selection of countries currently established

Figure 4. S&P 500 index and our EUR sample M&A activity development during 2020



3 Hypothesis building

Based on our learnings above we can start presenting our hypothesis for the study. Our study contributes to the discussion regarding market reactions to M&A events by taking into consideration three major factors: the CSR performance of the company measured using ESG rating, the time period of COVID-19 pandemic, and three different datasets providing global scope on the study. With the wide range of possibilities to focus on, we narrow our hypothesis and focus of the study to research how COVID-19 has impacted ESG based M&A transactions for the full dataset and for each individual dataset (US, EUR and EM).

While M&A transactions, on average, seem to be value destroying for the acquirer's shareholders (Yaghoubi et.al., 2018), there seems to be enough research to indicate, but not conclude, that M&A transactions based on target company's CSR performance, generally measured using ESG score, are actually value creating ones (Aktas, et.al., 2011, Deng et.al., 2013 and Krishnamurti et.al., 2013). There is some indication also that high CSR performance of a company is beneficial during times of crisis (Lins, Servaes and Tamayo, 2020), but as COVID-19 differs in terms of characteristics from 2008 financial crisis (Hasan et.al., 2020), the findings may not be relevant in COVID-19 landscape.

There is very limited amount of empirical evidence regarding COVID-19 and M&A landscape, but the most relevant study by Tampakoudis et.al. (2021) finds negative value effect of ESG performance for the shareholders of acquiring firms during COVID-19 crisis in the US. We believe there are three major reasons why these results differ from previous crises: 1) the sample period of Tampakoudis et.al. (2021) ends just after the slump and before the recovery phase, giving limited view of the crisis, 2) COVID-19 was extremely unexpected crisis, and the impact of it is still unclear across the world, creating extreme volatility in the markets, and 3) due to the uncertainty, the cost-benefit concerns regarding CSR related actions increased as investors and companies alike want to cut costs in order to survive the pandemic. While our sample time period also takes into account the recovery phase, based on the probability of the two latter reasons still being prevalent in the market, we conclude that:

H1: Overall, COVID-19 has had negative effect on acquirer's abnormal returns in ESG M&A transactions in all three datasets

Regarding the concern related to cost-benefits of ESG actions that Tampakoudis et.al. (2020) and Yen and André (2019) also discuss, the negative market reaction may not be the result of ESG actions being condemned by markets based on shareholder theory, but rather, especially in uncertain COVID-19 landscape, due to cost of CSR related actions outweighing the possible benefits. Influenced by Yen and André (2019), we state that:

H2: The negative abnormal returns are not fully associated with change in attitude towards pre-merger ESG score of the target, but rather the need of cost saving and increase in agency cost concerns during COVID-19 crisis

Even tough in general we expect a negative effect on abnormal returns in all three of the datasets, we believe that there are some dataset-specific characteristics that result into significantly results that we want to take into more major consideration.

While the need for cost saving is a prevalent hypothesis, we argue that investments towards environmental actions, especially in Europe where environmental regulations and goals are clearly the most developed in the world, can be seen as cost saving as company operations are shifting regardless towards more sustainable operations during and especially post COVID-19 crisis. Because of this, investors shouldn't be concerned about investments and acquisitions in sustainable actions and targets in Europe, but rather reward the companies as they gain significant competitive edge with these actions. With the highly developed and competitive markets that the European countries on average have, we believe investors do react to the information positively in Europe. We don't see the same investor sentiment in the US due to Trump presidency and its pro-brown asset agenda, or in EM due to lesser motivation towards sustainable actions and higher degree of cost saving concern due to higher market volatility and information asymmetry.

H3a: COVID-19 has had positive effect on M&A transactions measured with environmental score in Europe

Shifting focus towards the Emerging Markets, it is easy to state that due to higher volatility in the market, motivated by more corrupted governance and less sophisticated financial markets and information asymmetry, the market effect of COVID-19 is most negative there. But the concluding argument is the higher likelihood of majority ownership of one shareholder,

meaning that there is higher chance of agency concerns in the market pre and during COVID-19. As we believe COVID-19 only increases these agency concerns, we state that:

H3b: COVID-19 has had the most negative effect in all aspects of ESG M&A transactions in the Emerging Markets

Tampakoudis et.al. (2021) have produced a similar study to this only using US data, finding stronger negative effect during COVID-19 crisis. While we don't find motivation to argue against these findings, we believe the time period of the study, taking into account only the market crash and not the recovery phase of the pandemic outbreak, affects the results. As we take into account a longer time period with recovery phase included, we argue:

H3c: The negative effect of COVID-19 on ESG M&A transactions in the US is lesser than the one found by Tampakoudis et.al. (2021)

4 Data and methodology

In this section, we first present how the sample set of ESG M&A transactions is obtained. After that, we go through the data construction process, following the presentation of the methodology inspired mostly by Tampakoudis et.al. (2021) and Yen and André (2019). Lastly, we will describe the sample obtained.

4.1 Extracted data

The data utilized in this study is obtained from two widely known databases: the Securities Data Company's (SDC) Platinum M&A Database, and Thomson Reuters Eikon. The SDC database is used to identify the sample of mergers in the selected regions and countries. Thomson Reuters Eikon, in turn, is used to extract firm specific CSR and financial data as well as stock price returns. We combine the datasets from these databases and construct a comprehensive data set of ESG M&A transactions including information on deal, acquirer and target characteristics.

4.2 Sample construction

We start by collecting data from SDC database by extracting mergers from EM/US/EUR[6] based publicly listed companies between January 1, 2015 and April 19, 2021. We include only completed mergers, and thus all uncompleted deals are excluded from the sample. When gathering data from SDC database, we impose the following constraints following the criteria suggested by Yen and André (2019):

- Acquirer must be a listed company
- Acquirer's headquarter must be located in the selected region[7]
- Status of the M&A deals must be completed
- Transaction must be defined as merger
- Transaction value must be higher than $US 1 million
- The percentage held by the acquirer must exceed 50% after the deal

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[6,3] Emerging Markets (EM) countries include: Brazil, China, Greece, India, Israel, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, South Korea, Taiwan, Thailand and Turkey.
Europe (EUR) countries include: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, Ukraine, United Kingdom

Furthermore, to create the CSR M&A sample, we use the following constraints when obtaining data from the Thomson Reuters Eikon Datastream:

- Company must be a listed entity
- Company's headquarter must be located in the selected region[8]
- Social Pillar Score > 0.01
- Environmental Pillar Score > 0.01
- Governance Pillar Score > 0.01

4.2.1 Company identification codes

Very common issue when utilizing financial data from various databases is that these databases use different identifiers. This can cause issues as in order to merge data together, common identifiers are required. To solve this issue, we first extract the following identifiers on the acquirers from the SDC database: company name, acquiror SEDOL, acquiror CUSIP and acquiror exchange ticker. Secondly, we extract data from the Thomson Reuters Eikon with the following identifiers: acquiror SEDOL, company name and acquiror exchange ticker. Thirdly, we match the company specific identifiers between these two datasets. We manually confirm that the names of companies implied by the SDC match to those disclosed by the Thomson Reuters Eikon.

[8] Emerging Markets (EM) countries include: Brazil, China, Greece, India, Israel, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, South Korea, Taiwan, Thailand and Turkey.
Europe (EUR) countries include: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, Ukraine, United Kingdom

4.2.2 Financial and accounting data

After merging the datasets, we obtain firm- and deal specific data from the selected databases. Table 1 demonstrates the data extracted, and the variables which they are used for.

Table 1. Database, data and variables

The sample of mergers utilized in this study is constructed by using three data sources: the SDC Mergers and Acquisitions Database, Thomson Reuters Eikon, and World Bank Insitute.

Database	Data	Variable
TR Eikon	A continuous variable based on the acquirer social pillar score	SOC
TR Eikon	A continuous variable based on the acquirer environmental pillar score	ENV
TR Eikon	A continuous variable based on the acquirer governance pillar score	COG
SDC	A dummy variable equals to one if the acquisition occurred after 31 March 2020, the day which when WHO announced COVID-19 to be global pandemic	COVID-19
SDC	A dummy variable equals to one if the deal involves an acquirer firm and a target firm with headquarters located in different home countries	CROSS
SDC	A dummy variable equals to one if the only consideration offered in the transaction is a form of stock	SHARES
SDC	A dummy variable equals to one if the target company's management or board of directors recommends the offer	FRIENDLY
SDC	A dummy variable equals to one if the percentage of common or common equivalent shares outstanding held by the acquirer sixmonths prior to the transaction is above zero	TOEHOLD
SDC	The ratio of the acquirer's market value 4 weeks prior the transaction to the deal value	RELSIZE
SDC	Acquiror market value 4 weeks prior the transaction	LNSIZE
TR Eikon	Net income to the book value of assets at the fiscal year end before the deal announcement year	ROA
TR Eikon	The ratio of the acquirer's book value of total liabilities to the book value of total assets at the fiscal year end before the deal announcement year	DEBT
World Bank	The average value of the six individual WGI dimensions assigned to acquirer's country prior the year of the transaction occurrence	LEG
SDC	Dummy variables of the year	YEAR
SDC	A dummy variable equals to one if the acquirer and the target have different first two-digit standard industrial classification (SIC)	DIV
SDC	Dummy variables of the acquirers industry	IND

4.2.3 Return data

Daily stock returns for acquirers are obtained from the Thomson Reuters Eikon DataStream. We obtain stock prices surrounding the event ranging from T = -120 to T = +10, and calculate daily returns of acquirer i using the following formula:

$$R_{it} = \ln\left(\frac{Price_{it}}{Price_{it-1}}\right) \qquad (1)$$

in which R_{it} is the return of acquirer i on day t, $Price_{it}$ is the stock price of the acquirer i on day t, $Price_{it-1}$ is the stock price of acquirer i on day $t-1$, and ln is the natural logarithm.

4.3 Event study methodology

An event study is a common methodology to assess the impact of certain event such as M&A transaction on the value of the company. The method was firstly popularized by Fama et.al. (1969) and Ball & Brown (1968) who conducted the event study methodology to study the effect of stock splits on the stock market returns and earnings releases effect on stock market returns, respectively. The methodology has also been commonly used in many ESG studies (see e.g. Tampakoudis et.al., 2021, Yen & André, 2019; Deng et al. 2013). Hence, the event study methodology is a relevant methodology for our study as we are investigating the effect of ESG on the returns resulting from M&A transactions.

We construct the event study following (Yen, André, 2019). First, we identify the events and determine the event windows (Section 4.3.1). Secondly, we estimate the expected returns (Section 4.3.2). Thirdly, we calculate the abnormal returns (Section 3.3.3) and fourthly, we determine the independent variables used to explain abnormal returns (Section 4.3.4).

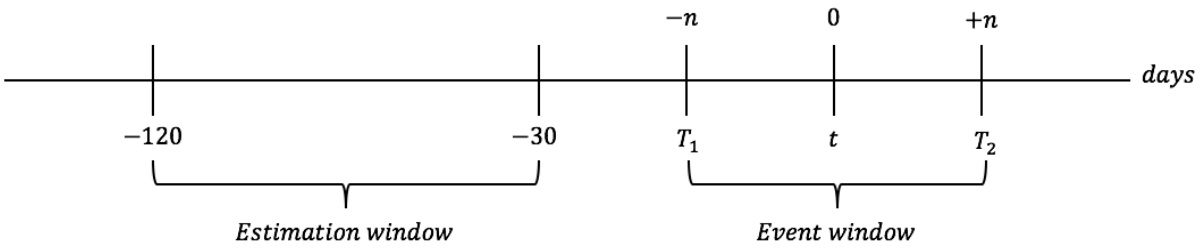
4.3.1 Definition of event window

The initial task of conducting an event study is to define the event of interest and identify the period over which the security prices of the firms involved in this event will be examined – known as the event window (MacKinlay, 1997). In this study, the events studied are merger announcements and the event windows will be larger than the specific period of interest. Using larger than the specific period of interest allows us to capture the price effects of the announcements occurring after, and before the first day of announcement of the deals. Hence, this approach provides financial markets time to reflect information leaks prior the deal announcement as well as gives time to reflect the deal's rationale after the announcement of the deal. To ensure robustness of our results, we will test several event windows. This approach is in line with the previous empirical tests investigating short-term abnormal returns (e.g. Yen and André, 2019; Deng et al., 2013).

The event window is defined as follows, $t = 0$ is the day when the merger is announced, $T_0 = -120$ is the day at which the estimation for the market model commences, $T_1 = -n$ is an n number of days before the merger announcement, and $T_2 = n$ is an n number of days after the merger announcement. Figure 5 illustrates an example of the timeline construction for a single

merger. As mentioned before, we use numerous event windows to ensure the robustness of our results.

Figure 5. Timeline for the event study



4.3.2 Return benchmarks

When calculating cumulative abnormal returns (CARs), the results are highly sensitive to the chosen benchmark returns. Therefore, the selection of benchmark indices are highly crucial to achieve correct understanding of the effect under review. In this study, we use 5 different benchmark indices: S&P 500 Industrials, S&P 500 Consumer Services, S&P 500 DIV Financials, S&P 500 Information Technology and S&P 500.

To identify in which industry an acquirer i operates, we use the classification of the Global Industry Classification Standard (GICS), which has 10 major industry categorizations. The categorizations are as follows: energy (code 10), materials (code 15), industrials (code 20), consumer discretionary (code 25), consumer staples (code 30), health care (code 35), financials (code 40), information technology (45), communication services (code 50), utilities (code 55) and real estate (code 60). Motivated by Yen and André (2019), we simplify the classification, and regroup these 10 groups into five industry-specific clusters: traditional industry (codes 10, 15, 20), service industry (codes 25, 30), financial industry (code 40), technology industry (codes 35, 45, 50, 55) and other (code 60). We use S&P 500 Industrials as a proxy for market returns for companies operating in the traditional industry, S&P 500 Consumer Services for the service industry, S&P 500 DIV Financials for the financial industry, S&P 500 Information Technology for the technology industry, and S&P500 for other industries.

4.3.3 Short-term abnormal stock returns (CARs)

To examine market's reactions to the announcements of M&A transactions, we apply an event study methodology to measure the abnormal returns close to the announcements (Yen, André, 2019, Fama, Fisher, Jensen, & Roll, 1969). Firstly, we build a market model to estimate the normal returns of bidder i, should the M&A transactions not occur. The market model is defined as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \qquad (2)$$

in which R_{it} is the daily return of bidder i on event date t. R_{mt} is the return of the benchmark index on event date t. Furthermore, ε_{it} is the residual from the regression. We estimate the intercept and slope by applying the method proposed by Scholes and Williams (1977) and Yen and André (2019) to account for nonsynchronous trading:

$$\hat{\beta}_i, SW = \frac{\hat{\beta}_{i,lag} + \hat{\beta}_i + \hat{\beta}_{i,lead}}{1+2\hat{\rho}m}, \qquad (3)$$

$$\hat{\alpha}_i, SW = \frac{1}{L1-2} \sum_{t=T_{0+2}}^{T_{1-1}} (R_{it}) - \hat{\beta}_{i,} SW \sum_{t=T_{0+1}}^{T_1} (R_{mt}), \qquad (4)$$

in which $\hat{\beta}_i, lag$, $\hat{\beta}_i$, $\hat{\beta}_i, lead$ are the ordinary least squares (OLS) estimates from the regressions of R_{mt-1}, R_{mt}, and R_{mt+1}. In addition, $\hat{\rho}m$ is the first-order autocorrelation of R_{mt}, and L_1 is the length of our estimation period. For the estimation of the market model parameters α_i and β_i, we follow Yen and André (2019) way, and use 90-day estimation period. We apply a subset of the data beginning with day $T_0 = -120$ and ending with $T_1 = -30$ relative to the announcement date (t=0) as our sample estimation period.

Secondly, we calculate the abnormal returns to assess the impact of M&A transactions on the returns of the bidders. We define abnormal return (AR_{it}) as the difference of the realized return (R_{it}) and the expected return $E(R_{it})$. As the market participants requires time to reflect and analyse the announced deals, we calculate cumulative abnormal returns (CARs) for bidder i over the time interval (t_1, t_2), which are centered around the announcement of the deals ($t = 0$);

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) = R_{i,t} - (\hat{\alpha}_i, SW + \hat{\beta}_i, SWR_{M,t}) \quad (5)$$

$$CAR_i(t_1 t_2) = \sum_{t=t_1}^{t_2} AR_{i,t}. \quad (6)$$

Finally, we perform cross-sectional analysis to investigate the effect of CSR performance on acquirer gains. We control for a number of factors relating to deal- and firm-level characteristics, which we will go through in the next section. We estimate the equation (7) as follows:

$$CAR_i(t_1 t_2) = \alpha + \beta_i CSR\ score_i + \sum_{j=1}^{m} \lambda_j X_{ij} + \varepsilon_i \quad (7)$$

where $CAR_i(t_1 t_2)$ is the cumulative abnormal return of the acquirer from deal i for the period $(t_1 t_2)$ as estimated in equation (6). The intercept α measures the excess returns after controlling for the effects of CSR performance and a set of m control variables included in vector X_{ij}.

4.3.4 Independent variables

There is a significant number of independent variables that can empirically be seen as impacting the M&A deal value creation. We haven't selected every variable that has been empirically tested in the past, but rather those that are commonly used by academics, and those that we believe capture our research question and methodology the best. Also, these variables might have different significance in different data sets, meaning the possibility for interesting findings between EM, US and EUR data sets. It should also be noted that these variables may bias our study's long-term results if the post-merger performance is associated with these variables. We will discuss the sixteen variables we have included next, and also expand on the motives for inclusion through previous academic research.

Environmental variable (ENV)

Transition to renewable resources can be seen as necessary for our society, and thus green economy can be seen as vastly growing field that attract investors both from financial and social reasons. Salvi, Petruzzella and Giakoumelou (2018) find that acquirers opting for "green deals" can find better financial outcomes than acquirers in other sectors. This results into better stock returns as firms with higher environmental standards and management realize positive stock returns, while those with weaker realize negative returns (Jo and Na, 2012).

ENV is a continuous variable, which denotes a percentage of environmental rating assigned to each sample acquirer one year prior the transaction announcement. We obtain environmental ratings from the Thomson Reuters Eikon.

Social variable (SOC)

Socially responsible firms can enjoy variety of benefits; talent attraction, customer attraction, risk management and possibility for cost reduction are some of them that can have significant effect on company market share (Sprinkle and Maines, 2010). These actions also lead to better company reputation that should be beneficial in M&A landscape either as a target or as an acquirer.

SOC is a continuous variable, which denotes a percentage of social rating assigned to each sample acquirer one year prior the transaction announcement. We obtain social ratings from the Thomson Reuters Eikon.

Corporate governance variable (COG)

Better corporate governance benefit firms through greater access to financing, lower cost of capital, better performance, and more favourable treatment of all stakeholders (Claessens and Yurtoglu, 2013). Based on this a good corporate governance rating for the acquiring company is highly desirable for M&A value creation. Claessens and Yurtoglu (2013) also find that voluntary and market corporate governance have less effect when a country's governance system is weak. As generally Emerging Markets governance systems are seen as weaker than, for example, US and European ones, and thus the positive effect should be smaller compared to US.

We obtain corporate governance ratings for acquirers i from the Thomson Reuters Eikon and assign continuous variable (COG) for each acquirer based on their ratings.

COVID-19 variable (COVID-19)

COVID-19 variable is used in order to find the COVID-19 impact during the sample period. Based on previous crisis events, the COVID-19 should have, on average, negative effect between ESG and shareholder value.

We create a dummy variable (COVID-19), which equals to one if the acquisition occurred after March 11 2020, the day when WHO announced COVID-19 to be global pandemic.

Legal quality variable (LEG)

To measure acquirer's legal environment this study applies the Worldwide Governance Indicators (WGIs) produced by the World Bank Institute (Kaufmann, Kraay, & Mastruzzi, 2019). The Worldwide Governance Indicators (WGI) reports aggregate and individual governance indicators for over 200 countries over the period 1996-2019. They have six dimensions as a proxy for governance: Voice and Accountability, Regulatory Quality, Political Stability and Absence of Violence, Rule of Law, Government Effectiveness, Control of Corruption.

As the dimensions are correlated between, we follow Binici, Hutchison, and Schindler (2010) and set a continuous variable (LEG) which represents the average value of the six individual WGI dimensions assigned to acquirer's country prior the year of the transaction occurrence. The values range from -2.5 to 2.5. Next, we divide our full sample group into two subgroups based on the median of the sample nations WGI value over the period from 2015-2019. Next, we assign a dummy variable (LEGH) of one to acquirer's if their headquarter is located in a country in which the WGI average value is above the median.

Legal quality has similar implications as corporate governance to M&A value creation; for example Weitzel and Berns (2006) find that host country corruption is negatively associated with target premiums. In their study a deterioration in the corruption index by one point (on a 10-point scale) is, on average, associated with a reduction of 21% of local targets' premiums. As Emerging Markets are in general my politically unstable and corrupt than US counterparts, the local target premiums for similar companies should be lower than US ones and might create more positive market reaction due to lesser transfer of wealth.

Cross-border transactions (CROSS)

Cross-border companies can have cultural and social differences, and the transaction process can differ greatly; for example the due diligence process may not be as competent as knowledge of the target and the target market most likely is weaker than in a national level. This effect may also be higher in countries with less developed governance system, more corruption and information asymmetry like in the Emerging Markets compared to US for example. Lim, Makhija and Shenkar (2016) back this claim by finding that there is strong negative association between cultural distance and premiums when US firms bid for foreign targets, by no such negative association is observed when foreign bidders evaluate US targets.

We obtain the locations of the acquirers' and targets' headquarters from the SDC database, and further divide the sample into two groups. We create a dummy variable CROSS, which equals to one if the deal involves an acquirer and target with headquarters located in different countries. In total we have 139 cross-border transactions in our sample.

Consideration Structure (SHARES)

The extant empirical evidence is that stock-financed public firm acquisitions are usually associated with negative shareholder wealth effects at the announcement time, while cash-financed are associated with normal or even small positive announcement effects (e.g., Travlos, 1987). The reasoning behind this phenomenon is a well-known observation in the corporate finance literature, the agency costs of overvalued equity hypothesis. However, Golubov, Petmezas and Travlos (2015) find with newer data set that stock-financed acquisitions are not value destructive, and the method of payment generally does not have explanatory power in the cross-section of acquirer returns. To further expand the discussion Sehgal, Banerjee and Deisting (2012) find that stock-financed mergers are actually value creating, and cash-financed mergers are value destroying the short run in BRICKS markets[9].

We obtain consideration structure of the deals from SDC database, and further divide the sample into two groups. We create a dummy variable SHARES, which equals to one if the deal is only financed by stock. In total we have 53 stock financed transactions in our sample.

Deal attitude (FRIENDLY)

Sudarsanam and Mahate (2006) find from 519 acquisitions of UK target firms during 1983-1995 that hostile acquirers deliver significantly higher shareholder value than friendly acquirers, and friendly acquirer top managers suffer greater job losses than those of hostile acquirers.

However, while hostile takeovers seem to create more value, when it comes to CSR-measured transactions the hostile takeovers may have negative affiliations. Zhang, Zhang and Yang (2020) studied friendly and hostile takeover bids by acquirers with high CSR engagement levels; acquirer with high ESG score and hostile transaction practice can be seen as a sign of

[1] BRICKS markets consist of Brazil, Russia, India, China and South Africa. Categorization based on estimate of dominant suppliers of manufactured goods, services and raw materials in the world by the year 2050.

hypocrisy in the eyes of stakeholders, which can worry investors and hurt returns. Analysing 1310 transactions from 2002 to 2012 they find this to be true; high ESG rated acquirers generally enjoy positive acquirer returns during acquisition announcements, but negative returns when the acquisition is a hostile one. This provides an interesting viewpoint to our study; if prior to COVID-19 the high ESG scoring companies have not participated in hostile takeover, has the attitude changed now when there is more concern about the future of the company?

We obtain deal attitude statistics from the SDC database, and divide the sample into two groups. We assign a dummy variable (FRIENDLY), which equals to one if the target company's management or board of directors recommends the offer to shareholders of the company.

Common Shares (TOEHOLD)

Toehold strategy means when an acquirer buys less than 5% of the target company's stock without the need to notify. This strategy can result into competitive advantage over rival bidders and can lower the risk and cost of the acquisition. The effects of toehold strategy are varied, with Farinha and Miranda (2003) finding significant increase in abnormal returns for the acquirer in Portugal, while Franks and Harris (1989) find no significant value in toehold bidding in the UK.

We obtain information from common and common equivalent share holdings from the SDC database, and divide the sample into two groups. We create a dummy variable (TOEHOLD), which equals to one if the acquirer has common or common equivalent share holdings above zero 6 months prior the transaction.

Diversifying transaction (DIV)

Diversification across industries has been found to lead into conglomerate discount (e.g. Dos Santos et.al., 2008), but generally negative effect in terms of value; there seems to be a transfer of value from shareholders to bondholders due to the risk-reducing effect of product diversification (e.g. Ansoff, 1957). However, if the acquirer operates in a global scale, the effect in value may be positive; Hitt et.al. (2006) argue that unrelated diversified firms benefit from economies of scale and scope in a global scale by sharing and leveraging their current resources and capabilities across business and geographical units, leading to competitive advantage.

We first obtain acquirers and targets industries from the SDC database, and divide the sample into two groups. We create a dummy variable (DIV), which equals to one if the acquirer and the target are operating in different industries. We measure industries standard industrial classification (SIC) codes.

Relative deal size (RELSIZE)

Relative size of the deal seem to affect the premia and shareholder value also; Alexandridis, Fuller, Terhaal and Travlos (2013) find that overpayment potential is lower in acquisitions of large targets, but they still destroy more value for acquirers around deal announcements. Reasoning for smaller premia might be due to fewer capable acquirers for large targets, reducing competition and "winner's curse" (Alexandridis et.al., 2010).

Reasoning for the acquirer value destruction is due to greater complexity inherent in large deals and its connection with post-merger integration problems and costs that can impede the realization of potential synergies (Alexandridis, Fuller, Terhaal and Travlos, 2013). In COVID-19 world where social contacts and travel is limited the post-merger integration most likely is even more challenging and complex as knowledge and cultural differences are more difficult to be shared and the integration processes as a whole might take longer time to execute.

The relative deal size is conducted by dividing the transaction value by the acquirer's market value of equity 4 weeks prior the deal announcement. Data is obtained from SDC database.

Company size factor (LNSIZE)

Moeller, Schlingermann and Stulz (2004) find that announcement return for acquiring-firm shareholders is roughly two percentage points higher than for smaller acquirers. Interestingly they also find that larger acquirers earn lower returns in strong-governance countries. Possible explanation for this is that in weak governance countries political connections and market power are stronger resources which can be exploited for shareholder value (Humphery-Jenner and Powell, 2014). This should indicate that in the Emerging Markets the value creation is more positive than in the US market, due to generally weaker governance, higher corruption levels and less decentralized markets.

We first obtain value of acquirer's market value 4 weeks prior the transaction from the SDC database. (LNSIZE) equals to natural logarithm of the acquirer's market value 4 weeks prior the announcement.

Return on assets (ROA)

ROA is a good indicator for post-acquisition long-term performance measurement; increase in ROA post-acquisition indicates that the synergies of the merger have been able to capture. Prior research on ROA in CSR-related acquisitions have been made; Salvi, Petruzzella and Giakoumelou (2018) find that there is statistically positive impact on bidders' ROA two- and three-years' post-acquisition when it comes to green deals done by American and European acquirers between years 2000 and 2016. However, despite the positive impact the bias in ROA measurement has to be taken into account as the ratio is sensitive to changes in leverage ratio or bargaining power caused by acquisitions (Barkema and Schijven, 2008).

(ROA) is the ratio of the acquirer's net income to the book value of total assets at the fiscal year prior the deal announcement year. Data is obtained from the Thomson Reuters Eikon.

Corporate structure (DEBT)

Additional debt does increase the risk of distress for acquirer, and Fan among others (2009) find that distressed companies facing better institutional background (e.g. better governance quality and greater degree of local financial development) display relatively better operating performance. This indicates that companies in Europe and US can add more debt than similar companies in the EM as they are operating in better governed and developed markets. This should mean a more positive returns for US and European shareholders.

(DEBT) is the ratio of the acquirer's book value of total liabilities to book value of total assets at the fiscal year prior the deal announcement year. Data is obtained from the Thomson Reuters Eikon.

Country factor (COUNTRY)

Using a dataset comprising of multitude of countries with different economical, cultural and social backgrounds, among others, makes country variable extremely relevant. Similarly to different markets, there a country-related differences in the data sets that affect the results. For

example European and EM data sets consists of multitude of different countries with vast differences between them that should be translated in the results.

We use dummy variables of the acquirer's nation.

Industry (INDUSTRY)

Similarly to the country-related differences, there are industry-related differences that affect the market reaction to acquisition announcement (Kim and Canina, 2013).

We use dummy variables of acquirer's industry. We first obtain Global Industry Classification Standards (GICS) from Thomson Reuters Eikon for all of our sample acquirers. GICS is an industry classification structure developed by MSCI and Standard & Poor's (S&P) which has 11 major industry categories. The 11 major industry categorizations include energy (code 10), materials (code 15), industrials (code 20), consumer discretionary (code 25), consumer staples (code 30), health care (35), financials (code 40), information technology (code 45), communication services (code 50), utilities (code 55) and real estate (code 60). As in Yen, André (2019), we simplify the industry classification by regrouping these 11 industries into five industry-specific clusters: traditional industry (codes 10, 15, 20), service industry (codes 25, 30), financial industry (code 40), technology industry (codes 35, 45, 50, 55) and real estate (code 60).

Year (YEAR)

Deal year can also have significant impact as financial markets are heavily impacted by events happening during each individual year. For example as we don't control for Brexit event as itself, using year variable can show findings that would otherwise not be explored further.

We use dummy variables for year. YEARn is equal to one if acquirers make a deal announcement in year n and zero otherwise.

4.4 Sample description

Table 2 reports the numbers and average values of the sample deals organized by acquirer region. In total we have three regions sampled, which include acquisitions from 34 different countries. Most of the deals are initiated in the USA (293 of 564, or 52.0%). The average amount paid in the USA is US$5938.0 million, which is considerably more than in the Emerging Markets in which the average was $US737.3 million. Acquiring firms paid of average, US$4282.3 million for the targets in our sample deals.

Table 3 lists the number and average values of the sample deals for five types of industry (traditional industry, service industry, financial industry, technology industry, and other) and by sample period. The largest proportion of the deals is in the traditional sector (220 deals, or 38.7%), followed by tech industry (154 deals, or 27.1%). The average deal value differs to some extent based on the industry sectors. Values range from US$6216.9 in the service industry to US$3914.2 in the tech-intensive industry. Within the sample period, 2020 has the lowest amount of announced deals (57 deals or 10.2%). This is likely due to the COVID-19 pandemic outbreak. The data also reveals that the average deal value is comparatively large in 2019; this is caused by few large deals announced in the service industry in that particular year.

Table 4 lists the mean, median, minimum and maximum values of the ESG ratings for 34 different countries and 3 different regions.

Table 2. Statistics for sample transactions by acquirers' country and region

This table reports statistics for sample transactions by acquirers' country and region. The sample includes 564 M&A transactions in 34 different countries across three different regions (US, Europe and Emerging Markets). The M&A sample was obtained from the Thomson Reuters SDC Platinum M&A Database.

Country	Number of Deals		Average Value ($US million)	Total Value ($US million)
Austria	2	0.4 %	551.5	1 103.0
Belgium	3	0.5 %	34 262.0	102 786.1
Brazil	20	3.5 %	2 206.7	44 133.9
China	15	2.7 %	723.0	10 845.1
Denmark	3	0.5 %	2 071.7	6 215.1
Finland	2	0.4 %	2 347.7	4 695.5
France	7	1.2 %	7 591.3	53 138.8
Germany	3	0.5 %	1 416.2	4 248.7
Greece	1	0.2 %	815.9	815.9
India	37	6.6 %	377.1	13 954.2
Ireland	8	1.4 %	2 190.7	17 525.9
Israel	5	0.9 %	981.0	4 904.9
Italy	2	0.4 %	847.6	1 695.3
Luxembourg	2	0.4 %	77.5	154.9
Malaysia	4	0.7 %	76.8	307.1
Mexico	6	1.1 %	595.0	3 570.0
Morocco	1	0.2 %	495.0	495.0
Netherlands	5	0.9 %	16 078.0	80 389.8
Norway	6	1.1 %	252.4	1 514.3
Peru	1	0.2 %	41.0	41.0
Philippines	2	0.4 %	28.2	56.4
Poland	6	1.1 %	144.0	864.0
Russia	11	2.0 %	51.2	563.6
South Africa	15	2.7 %	480.0	7 199.8
South Korea	29	5.1 %	1 003.2	29 093.4
Spain	3	0.5 %	423.1	1 269.2
Sweden	6	1.1 %	1 327.2	7 963.2
Switzerland	5	0.9 %	1 247.2	6 235.9
Taiwan	10	1.8 %	513.5	5 134.6
Thailand	3	0.5 %	1 540.4	4 621.2
Turkey	6	1.1 %	36.8	221.0
Ukraine	1	0.2 %	64.0	64.0
United Kingdom	41	7.3 %	6 473.3	265 403.9
USA	293	52.0 %	5 918.0	1 733 986.1
EM	172	30.5 %	737.3	126 821.9
EUR	99	17.6 %	5 600.0	554 403.5
US	293	52.0 %	5 918.0	1 733 986.1
Full sample	564	100.0 %	4 282.3	2 415 211.5

Table 3. Statistics for the deal value by announcement year and by acquirers' industry ($US million)

Year	Traditional Industry		Service Industry		Financial Industry		Tech-Intensive Industry		Other		Total	
	Count	Avg.	Count	Avg.	Count	Avg.	Count	Avg.	Count	Avg.	Count	Avg.
2015	42	1 748.1	25	8 155.5	13	5 388.9	27	7 452.1	4	7 691.7	111	4 761.4
2016	46	6 298.4	20	1 753.3	9	4 276.3	23	1 853.4	12	1 020.3	110	3 674.1
2017	39	2 136.0	13	10 240.4	13	3 942.7	25	7 712.2	2	4 964.3	92	4 433.1
2018	37	5 689.8	14	3 588.6	11	1 905.4	31	3 865.7	5	6 595.7	98	4 207.8
2019	26	3 097.6	13	9 370.8	13	15 691.3	28	4 305.4	7	3 672.5	87	5 021.7
2020	25	5 007.4	10	5 081.7	7	131.5	14	2 628.8	1	1 200.0	57	3 714.0
2021	3	793.0	1	1 862.4	0		5	3 144.3	0		9	1 526.9
Total	218	3 968.2	96	6 216.9	66	3 803.7	153	3 914.2	31	3 335.6	564	4 282.3

Table 4. Summaries of ESG ratings

This table reports summaries of CSR performance measured using ESG ratings. CSR performance measures are rating scores including environmental, social and corporate governance ratings, assigned to each acquirer prior to the announcement year from the Thomson Reuters Datastream database. The sample includes 564 M&A transactions in 34 different countries across three different regions (US, Europe and Emerging Markets). The M&A sample was obtained from the Thomson Reuters SDC Platinum M&A Database.

Country	Count	Social rating (SOC)				Environment rating (ENV)				Corporate governance rating (COG)			
		Mean	Median	Min	Max	Mean	Median	Min	Max	Mean	Median	Min	Max
Austria	2	61.2 %	61.2 %	46.8 %	75.5 %	51.8 %	51.8 %	35.9 %	67.7 %	47.1 %	47.1 %	22.0 %	72.1 %
Belgium	3	54.9 %	51.5 %	37.1 %	76.1 %	50.1 %	48.9 %	47.9 %	53.5 %	73.8 %	72.6 %	65.2 %	83.7 %
Brazil	20	67.1 %	73.3 %	25.7 %	94.6 %	54.7 %	58.0 %	6.3 %	91.1 %	60.0 %	62.5 %	11.8 %	94.7 %
China	15	22.1 %	26.4 %	4.7 %	42.0 %	42.5 %	44.2 %	2.1 %	79.0 %	42.9 %	38.6 %	9.3 %	72.5 %
Denmark	3	69.1 %	71.0 %	65.1 %	71.3 %	68.2 %	66.1 %	56.5 %	82.1 %	59.1 %	55.5 %	52.8 %	69.0 %
Finland	2	70.0 %	70.0 %	65.6 %	74.3 %	68.0 %	68.0 %	54.2 %	81.8 %	39.6 %	39.6 %	26.8 %	52.4 %
France	7	79.3 %	88.7 %	47.8 %	95.9 %	77.4 %	83.9 %	45.9 %	94.1 %	69.1 %	77.3 %	26.3 %	84.0 %
Germany	3	62.5 %	65.1 %	54.6 %	67.7 %	51.9 %	64.6 %	10.8 %	80.2 %	45.6 %	41.1 %	38.3 %	57.4 %
Greece	1	69.9 %	69.9 %	69.9 %	69.9 %	62.2 %	62.2 %	62.2 %	62.2 %	62.5 %	62.5 %	62.5 %	62.5 %
India	37	62.9 %	64.5 %	25.4 %	94.9 %	56.5 %	56.0 %	0.8 %	95.8 %	48.2 %	43.7 %	14.7 %	94.6 %
Ireland	8	68.8 %	78.0 %	23.7 %	91.6 %	50.1 %	55.1 %	0.8 %	78.6 %	46.7 %	47.5 %	21.4 %	92.8 %
Israel	5	46.6 %	50.0 %	1.3 %	72.9 %	18.2 %	21.9 %	2.8 %	32.8 %	49.4 %	52.0 %	11.4 %	74.5 %
Italy	2	81.6 %	81.6 %	81.0 %	82.2 %	68.8 %	68.8 %	41.5 %	96.1 %	59.8 %	59.8 %	59.5 %	60.1 %
Luxembourg	2	63.5 %	63.5 %	56.6 %	70.4 %	12.2 %	12.2 %	11.7 %	12.7 %	55.0 %	55.0 %	54.5 %	55.4 %
Malaysia	4	51.9 %	56.2 %	26.7 %	68.5 %	35.5 %	37.7 %	20.8 %	45.7 %	32.2 %	22.1 %	18.5 %	66.3 %
Mexico	6	55.3 %	56.3 %	25.7 %	86.5 %	47.9 %	38.9 %	0.3 %	93.0 %	65.7 %	75.1 %	41.6 %	80.0 %
Morocco	1	52.1 %	52.1 %	52.1 %	52.1 %	53.1 %	53.1 %	53.1 %	53.1 %	46.7 %	46.7 %	46.7 %	46.7 %
Netherlands	5	71.6 %	78.6 %	53.0 %	83.7 %	62.5 %	48.3 %	43.9 %	91.3 %	78.6 %	79.5 %	67.1 %	94.2 %
Norway	6	68.0 %	78.5 %	10.4 %	88.4 %	55.0 %	54.2 %	6.1 %	95.3 %	58.4 %	57.3 %	23.9 %	93.7 %
Peru	1	25.3 %	25.3 %	25.3 %	25.3 %	6.8 %	6.8 %	6.8 %	6.8 %	18.3 %	18.3 %	18.3 %	18.3 %
Philippines	2	69.4 %	69.4 %	49.4 %	89.3 %	72.0 %	72.0 %	64.4 %	79.6 %	75.7 %	75.7 %	66.4 %	84.9 %
Poland	6	46.5 %	40.4 %	22.0 %	78.4 %	37.2 %	34.4 %	17.1 %	65.5 %	56.9 %	58.7 %	32.8 %	73.8 %
Russia	11	41.3 %	34.9 %	13.5 %	73.5 %	35.6 %	29.5 %	4.9 %	84.0 %	65.0 %	65.1 %	47.5 %	74.8 %
South Africa	15	46.6 %	41.6 %	25.6 %	79.1 %	39.2 %	38.2 %	6.6 %	84.6 %	48.6 %	51.1 %	8.0 %	83.9 %
South Korea	29	60.2 %	66.8 %	8.3 %	95.1 %	63.2 %	66.8 %	3.2 %	90.7 %	59.0 %	60.8 %	9.3 %	93.9 %
Spain	3	63.9 %	57.6 %	56.2 %	78.0 %	60.2 %	67.6 %	38.8 %	74.3 %	55.5 %	51.1 %	48.5 %	66.9 %
Sweden	6	77.1 %	78.8 %	61.8 %	90.6 %	73.1 %	80.1 %	47.8 %	92.5 %	60.7 %	60.4 %	34.5 %	87.1 %
Switzerland	5	52.5 %	58.0 %	18.1 %	72.0 %	53.8 %	50.3 %	46.5 %	66.8 %	46.3 %	47.4 %	22.5 %	76.4 %
Taiwan	10	59.7 %	72.0 %	8.9 %	95.7 %	57.1 %	58.2 %	29.4 %	84.7 %	72.7 %	71.5 %	52.9 %	88.8 %
Thailand	3	59.5 %	59.2 %	33.8 %	85.6 %	31.8 %	24.8 %	3.8 %	66.8 %	42.1 %	28.9 %	22.6 %	74.7 %
Turkey	6	76.3 %	71.8 %	71.7 %	85.5 %	81.1 %	81.7 %	80.0 %	81.8 %	43.4 %	48.6 %	31.6 %	49.9 %
Ukraine	1	26.0 %	26.0 %	26.0 %	26.0 %	17.0 %	17.0 %	17.0 %	17.0 %	68.3 %	68.3 %	68.3 %	68.3 %
United Kingdom	41	65.1 %	66.2 %	30.7 %	93.8 %	58.1 %	60.2 %	3.0 %	95.7 %	64.7 %	66.9 %	19.4 %	92.7 %
USA	293	62.1 %	64.1 %	12.4 %	97.8 %	53.2 %	57.9 %	1.4 %	92.3 %	59.6 %	62.4 %	5.0 %	98.6 %
EM	172	55.0 %	56.8 %	1.3 %	95.7 %	51.2 %	51.3 %	0.3 %	95.8 %	54.0 %	55.8 %	8.0 %	94.7 %
EUR	99	66.6 %	68.6 %	10.4 %	95.9 %	58.4 %	58.4 %	0.8 %	96.1 %	60.8 %	62.6 %	19.4 %	94.2 %
US	293	62.1 %	64.1 %	12.4 %	97.8 %	53.2 %	57.9 %	1.4 %	92.3 %	59.6 %	62.4 %	5.0 %	98.6 %
Full sample	564	60.7 %	64.3 %	1.3 %	97.8 %	53.5 %	56.0 %	0.3 %	96.1 %	58.1 %	60.1 %	5.0 %	98.6 %

5 Results

In this section, we present the results of our thesis. First, we investigate the effect of ESG rating using univariate analysis. Secondly, we investigate the cumulative abnormal returns of the sample regions by looking at the visual evidence. Thirdly, we run simple regressions on the sample regions. And lastly, we investigate if the transaction characteristics affect acquirer short-term performance and the effect of ESG rating.

5.1 Visual evidence of data

Before distinguishing the differences between the impact of ESG rating pre and during the COVID-19 pandemic, we proceed to investigate the market reaction to all acquisitions in our sample, excluding the ESG rating. This helps to understand if COVID-19 has impacted the M&A market reaction overall that should be taken into account before we study the impact of ESG rating. We do this in figures 6, 7, 8 and 9 by illustrating the difference between cumulative abnormal returns in full sample period and only during the COVID-19 pandemic. The solid line represents the average abnormal return for the full sample period from 2015 – 2021, while the dotted line denotes the average abnormal returns during the COVID-19 pandemic and the line between them denotes the spread between the results. When looking at the graphs, we can see that the results fluctuate between regions in terms of spread between full sample and COVID-19 sample as well as return percentages pre- and post-announcement.

Interestingly, contrary to our first hypothesis, COVID-19 seems to have had positive effect on full sample cumulative abnormal returns. The market reaction during COVID-19 has been positive for acquisitions in all samples (see Figure 6). During the announcement day (days relative to announcement = 0), the difference between full sample and COVID-19 period is approximately 1.2%, while the positive reaction stays positive during the rest of the event window in COVID-19 period, and stays negative during full sample period. This indicates that there has been a difference in the market reaction after COVID-19 pandemic, but this does not tell if high or low ESG rating has had any impact on the market reaction.

In the US sample (see Figure 7) we find the acquisitions announced during the COVID-19 to perform better in the US, especially during the day of the deal announcement (days relative to announcement = 0). The returns differ quite randomly between days of the deal announcement, but the spread between COVID-19 and full sample period is consistently positive after the deal

announcement with the COVID-19 sample enjoying higher returns. The full sample period announcement returns are negative even with the COVID-19 pandemic sample acquisitions. This seems to provide some indication regarding our hypothesis that our sample period enjoys less negative returns in the US than the one used by Tampakoudis et.al (2021).

Contrary to the US, in Europe the acquisitions announced during the COVID-19 pandemic period have performed worse than full sample ones, although there has been a similar positive spike during the deal announcement day to that of all sample and US sample (see Figure 8). After the announcement, the spread has consistently been negative, and the overall announcement return for COVID-19 pandemic is close to zero. This could indicate that our hypothesis of COVID-19 having positive effect in high environmental scoring acquisitions to be false, but as mentioned before the sample does not separate high or low ESG scoring acquisitions.

In the Emerging Markets, interestingly the spread has been consistently positive during the event window (-10, 10), and is considerably higher than the spread in the US or Europe (see Figure 9). Furthermore, the spread seems to increase after the deal announcements. However, the Emerging Markets sample does not see similar positive spike during the day of deal announcement. These results could be due to the fact that as mentioned previously, the Emerging Markets have increased their M&A activity, and acquisitions as a whole are still seen as positive actions. Due to lesser developed markets the investors can be seen as acting irrationally and fail to identify acquisitions as value destroying, or the investors are rational and see Emerging Markets having many undervalued opportunities and reward the acquirers on capitalizing on them. Regardless of the reasoning, this evidence seems to provide reasoning that our hypothesis of Emerging Markets enjoying the most negative COVID-19 effect to be rejected.

However, as these samples do not divide high or low ESG rating companies, and does not provide the most accurate indication of COVID-19 effect as COVID-19 period is in both period samples, among other reasons, we need to produce additional studies which we will present next.

Figure 6. Cumulative Abnormal Returns – All Samples

The graph belove show the average cumulative abnormal returns (CARs) of acquisitions for all sample regions. The solid line represents the average abnormal return of full sample period from 2015 – 2021 and the dotted line denotes the average abnormal returns during COVID-19 pandemic.

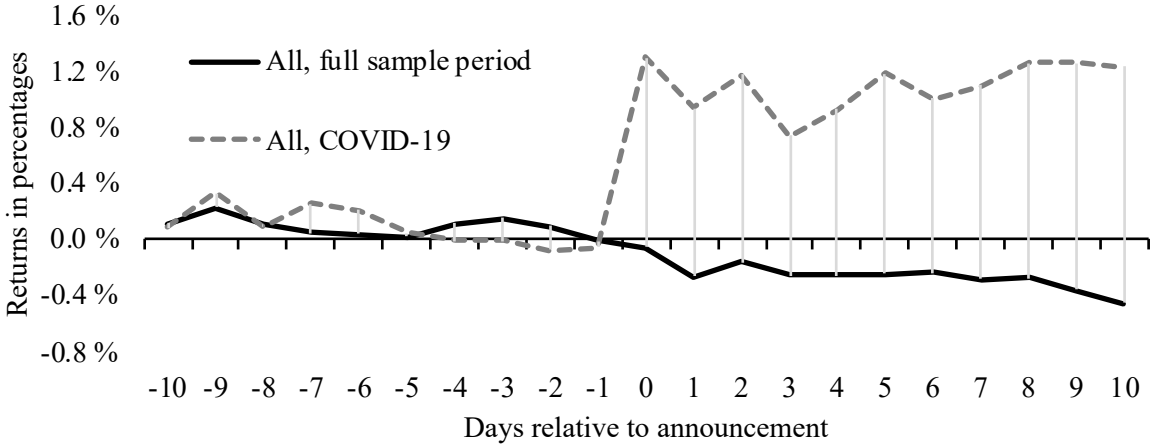


Figure 7. Cumulative Abnormal Returns – United States of America Sample

The graph belove show the average cumulative abnormal returns (CARs) of acquisitions for the US sample. The solid line represents the average abnormal return of full sample period from 2015 – 2021 and the dotted line denotes the average abnormal returns during COVID-19 pandemic.

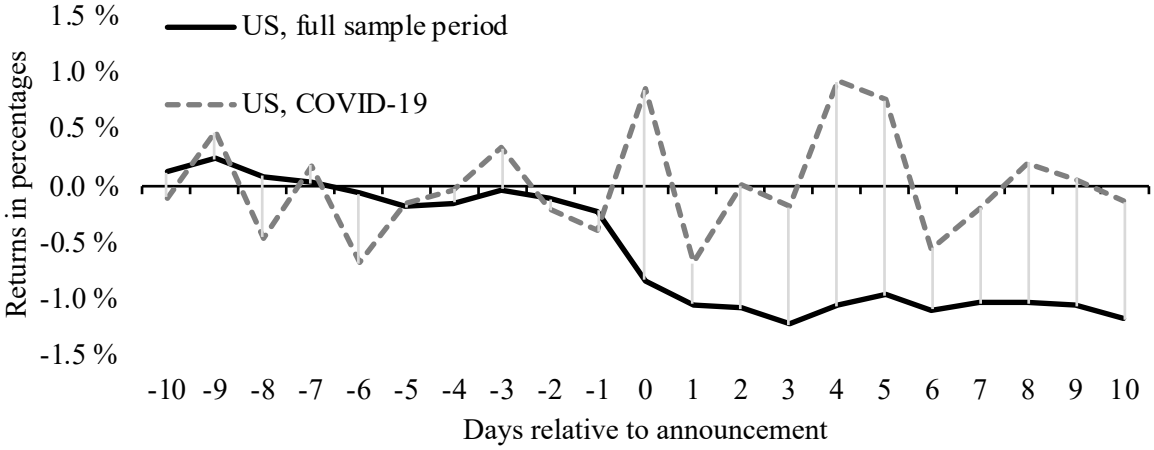


Figure 8. Cumulative Abnormal Returns – Europe Sample

The graph belove show the average cumulative abnormal returns (CARs) of acquisitions for the EUR sample. The solid line represents the average abnormal return of full sample period from 2015 – 2021 and the dotted line denotes the average abnormal returns during COVID-19 pandemic.

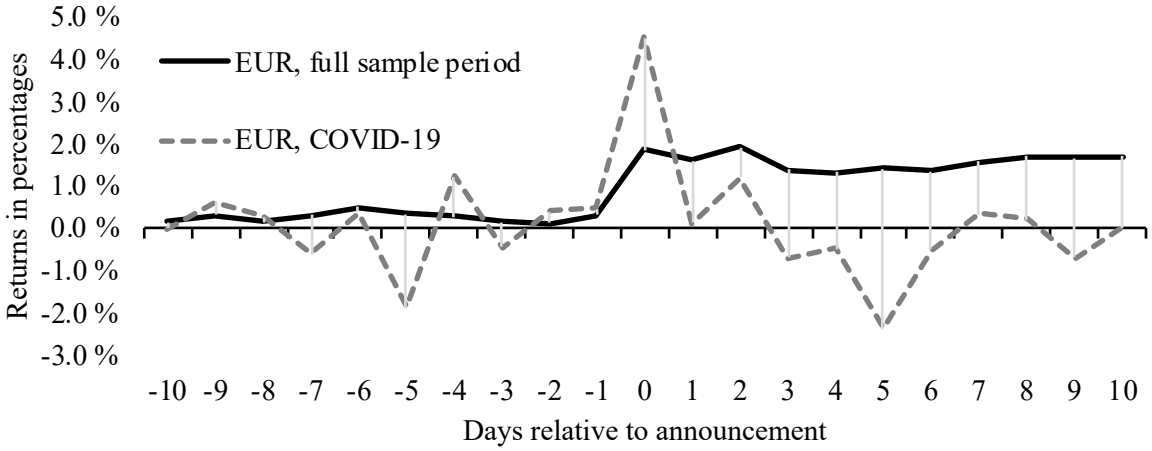
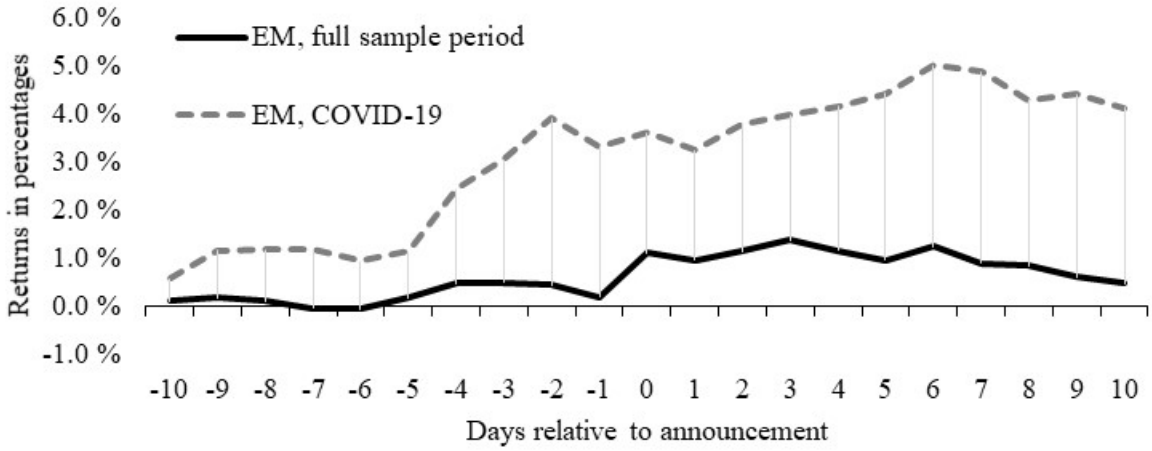


Figure 9. Cumulative Abnormal Returns – Emerging Markets Sample

The graph belove show the average cumulative abnormal returns (CARs) of acquisitions for the Emerging Markets sample. The solid line represents the average abnormal return of full sample period from 2015 – 2021 and the dotted line denotes the average abnormal returns during COVID-19 pandemic.



5.2 Univariate analysis

In this section, we investigate the effect of acquirers' CSR performance by using univariate analysis following methods used by Tampakoudis et.al (2021). By means of univariate analysis, we compare the cumulative abnormal returns between firms with high ESG rating (75th percentile) and firms with low ESG rating (25th percentile). Motivated by Yen and André (2019), we focus our research to investigate the effects of each ESG dimension separately to identify each individual effect, differing from Tampakoudis et.al (2021). We focus our analysis on the three ESG dimensions; environmental, social and governance. In this section we do now separate the period sample to pre and COVID-19 periods, but rather use the full sample period from January 2015 to 19th of April 2021.

5.2.1 Univariate study results – All Samples

Tables 5, 6 and 7 report the cumulative returns for all sample regions firms with respect to their CSR performance over the sample period and across multiple event windows. Panel A's show that abnormal returns for acquiring firms with the highest score in all of the three ESG dimensions are negative and statistically significant in most of the event windows. The results for acquirers with high ESG ratings vary from -1.3% to 0.1%, indicating significant value destruction following the deal announcements. Panel B's report that acquirers with low ESG rating on average perform better than high ESG rated ones in all three dimensions, with results ranging from -0.2% to 1.3%. The results indicate that acquirers with low ESG rating are able to create more value compared to high ESG acquirers in the full sample, indicating that COVID-19 has had negative value effect on increase in acquirer ESG rating in terms of market reaction. This provides some evidence of our first hypothesis to be correct. However, even though the differences between high- and low ESG rating acquirers in most of the cases are negative, the results are not statistically significant in any of the event windows in low ESG dimensions.

From the three different dimensions investigated, governance has the most negative effect on the returns of the acquirers both in high and low scoring acquirers. However, we can find statistically significant results only in the high governance scoring one. This could be due to the fact that high governance scoring companies are more risk-averse during times of crisis, and fail to capture the potential undervaluation in the market due to more active governance. For example Sayari and Marcum (2017) find firms in the Emerging Markets adopting stricter US governance structures discourage their risk-taking behavior. It could be speculated that the

results could also be due to somewhat reversed scenario. Conservative corporate governance only accepts obtaining companies that they falsely value as safe due to target's pre-COVID characteristics. These companies are being undervalued in terms of riskiness in the market due to financial markets failing to obtain new relevant information from the COVID-19 era. Acquirers' corporate governance fails to realize the failed assessment of risk, leading to significant premiums paid and transfer of wealth.

Table 5. Acquirers' gains with regard to the environmental, social and governance score – All Samples

These tables represent a comparison between high- and low environmental, social and governance score acquirers respectively: the tables report the cumulative abnormal returns (CARs) for a sample of 282 acquiring firms in all sample regions (EM, EUR, US) between 1 January 2015 and 19 April 2021. Panels A and B represent the mean and median CARs, standard deviation and percentage of firms with positive CARs. Panel C reports the statistical significance of the difference between the means of the two samples. ***, **, *, indicates statistical significance at the 1%, 5% or 10% level, respectively. Superscripts a, b and c denote significance at 1, 5 and 10 levels, respectively.

Environmental score

	Panel A: High Env. Score: (Environmental Score > 75th percentile) (n= 141) - All Samples				Panel B: Low Env. Score: (Environmental Score < 25th percentile) (n= 141) - All Samples				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.7%[a]	-0.2 %	0.04	47.5 %	0.3 %	0.2 %	0.06	53.2 %	-1.62
CAR (-1, 0)	-0.7%[a]	-0.2 %	0.04	46.1 %	0.2 %	0.2 %	0.05	50.4 %	-1.40
Announcement									
CAR (-3, 3)	-1.0%[a]	0.2 %	0.05	52.5 %	0.1 %	0.1 %	0.08	56.0 %	0.36
CAR (-2, 2)	-0.7%[a]	-0.1 %	0.05	48.9 %	0.1 %	0.1 %	0.07	50.4 %	-0.34
CAR (-1, 1)	-0.8%[a]	0.0 %	0.04	49.6 %	0.2 %	0.2 %	0.06	51.8 %	-0.65
CAR (-1, 2)	-0.7%[a]	0.0 %	0.05	50.4 %	0.2 %	0.2 %	0.06	48.9 %	-0.49
Post-announcement									
CAR (0, 1)	-0.6%[a]	-0.1 %	0.04	45.4 %	0.2 %	0.2 %	0.06	48.6 %	-1.06
CAR (0, 3)	-0.8%[a]	-0.2 %	0.05	48.2 %	-0.1 %	-0.1 %	0.07	49.6 %	-0.45

Social score

	Panel A: High Social Score: (Social Score > 75th percentile) (n= 142) - All Samples				Panel B: Low Social Score: (Social Score < 25th percentile) (n= 141) - All Samples				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.5%[a]	-0.1 %	0.04	46.5 %	0.3 %	0.3 %	0.06	56.0 %	-1.25
CAR (-1, 0)	-0.5%[a]	0.0 %	0.04	48.6 %	0.1 %	0.1 %	0.05	49.6 %	-0.53
Announcement									
CAR (-3, 3)	-0.2 %	0.2 %	0.06	52.1 %	0.0 %	0.0 %	0.08	57.4 %	0.29
CAR (-2, 2)	0.0 %	0.2 %	0.05	53.5 %	-0.2 %	-0.2 %	0.07	46.8 %	0.88
CAR (-1, 1)	-0.3 %	0.2 %	0.05	52.1 %	-0.1 %	-0.1 %	0.06	48.2 %	0.66
CAR (-1, 2)	-0.1 %	0.2 %	0.05	54.2 %	-0.2 %	-0.2 %	0.06	46.8 %	0.84
Post-announcement									
CAR (0, 1)	-0.1 %	0.2 %	0.05	53.5 %	0.0 %	0.0 %	0.06	46.5 %	0.60
CAR (0, 3)	-0.1 %	0.2 %	0.05	52.8 %	0.0 %	0.0 %	0.08	50.4 %	0.41

Governance score

	Panel A: High Governance Score: (Governance Score > 75th percentile) (n= 141) - All Samples				Panel B: Low Governance Score: (Governance Score < 25th percentile) (n= 141) - All Samples				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.8%[a]	0.0 %	0.05	50.4 %	0.3 %	0.2 %	0.05	53.2 %	-0.80
CAR (-1, 0)	-0.7%[a]	-0.3%[c]	0.04	45.4 %	0.2 %	0.2 %	0.04	52.5 %	-1.40
Announcement									
CAR (-3, 3)	-1.3%[a]	-0.2 %	0.06	46.1 %	-0.3 %	-0.3 %	0.08	53.2 %	0.22
CAR (-2, 2)	-1.0%[a]	-0.2 %	0.06	47.5 %	-0.1 %	-0.1 %	0.06	45.4 %	-0.25
CAR (-1, 1)	-1.2%[a]	0.0 %	0.05	48.9 %	-0.1 %	-0.1 %	0.06	49.6 %	0.03
CAR (-1, 2)	-1.1%[a]	0.0 %	0.05	49.6 %	0.0 %	0.0 %	0.06	46.1 %	-0.11
Post-announcement									
CAR (0, 1)	-1.0%[a]	-0.2 %	0.05	45.4 %	0.0 %	0.0 %	0.06	48.2 %	-0.67
CAR (0, 3)	-1.1%[a]	-0.7%[b]	0.06	44.7 %	-0.3 %	-0.3 %	0.07	51.8 %	-0.75

5.2.2 Univariate study results – US Sample

Tables 8, 9 and 10 report the cumulative abnormal returns for US firms with respect to their ESG ratings over the entire sample period and across multiple event windows. Panel A's show that abnormal returns for US based firms with the highest ESG rating (are negative and statistically significant (at the 1% level) in all event windows and all ESG dimensions. The losses for acquirers with high ESG ratings vary from -2.4% to -0.6%, indicating significant value destruction following the deal announcement. Panel B's report that in contrast, firms with low ESG rating tend to have better performance as their returns range from -1.8% to +0.5%, with one third of the results being positive. However, the results for low ESG acquirers are not statistically significant in all of the event windows and any of the ESG dimensions. These results suggest that low score ESG firms are able to create more value to their shareholders through M&A deals than companies with high ESG scores also in the US. Panel C's show the statistical significance between the average abnormal returns of firms with high ESG score compared to

firms with low governance scores. Interestingly, abnormal returns for firms with high governance scores are lower and statistically significant (except in (-2, 2) event window) compared to firms with low governance scores. This indicates similar relation to the aforementioned sample between corporate governance, risk taking and failure to take advantage of or recognize mise-valuations the market.

In the US sample, we find the acquirers with high social score to experience better returns than low social scoring ones. This could be due to the stakeholder theory (Freeman, 1984). The positive investor sentiment in the US could be due to the significant political turmoil and dissension the country has experienced in the past years. Some of these well-known dissensions inside the American society are the 2016 presidential selection and the rights of minority groups. Because of this, companies that value the rights and well-being of its employees and stakeholders experience popularity that they capitalize on currently.

Furthermore, panel C of Table 9 shows that there seems to exist some sort of statistical significance between high environmental score and low environmental score acquirers as the difference is negative and statistically significant in two of the event windows. The more negative results of high environmental score could indicate the previously discussed wealth transfer between green and brown assets in the US by the Trump presidency. Also, Hoang et. al. (2020) found that there seems to be negative relationship between environmental transparency and financial performance during the financial crisis. The cost-benefit concerns of investors could arise in terms of environmental investments due to more negative attitude towards the future of the world during times of crisis.

Table 6. Acquirers' gains with regard to the environmental, social and governance score – US Sample

These tables represent a comparison between high- and low environmental, social and governance score acquirers: the tables report the cumulative abnormal returns (CARs) for a sample of 148 acquiring firms in the US between 1 January 2015 and 19 April 2021. Panels A and B represent the mean and median CARs, standard deviation and percentage of firms with positive CARs. Panel C reports the statistical significance of the difference between the means of the two samples. ***, **, *, indicates statistical significance at the 1%, 5% or 10% level in Panel

C, respectively. Superscripts a, b and c denote significance at 1%, 5% and 10% levels in Panel A and B, respectively.

Environmental score

	Panel A: High Env. Score: (Environmental Score > 75th percentile) (n= 75) - US Sample				Panel B: Low Env. Score: (Environmental Score < 25th percentile) (n= 74) - US Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-1.8%[a]	-0.8%[a]	4.0 %	39.2 %	-0.3 %	0.2 %	5.9 %	51.4 %	-1.86*
CAR (-1, 0)	-1.6%[a]	-0.6%[a]	3.7 %	35.1 %	-0.9%[a]	-0.6%[a]	5.1 %	44.6 %	-1.51
Announcement									
CAR (-3, 3)	-2.4%[a]	-1.3%[a]	5.3 %	37.8 %	-0.7 %	0.4 %	7.7 %	51.4 %	-1.59
CAR (-2, 2)	-2.0%[a]	-1.2%[a]	4.7 %	37.8 %	-0.9%[c]	-0.1 %	6.9 %	50.0 %	-1.18
CAR (-1, 1)	-1.9%[a]	-1.0%[a]	4.4 %	37.8 %	-0.6 %	-0.3 %	6.2 %	47.3 %	-1.49
CAR (-1, 2)	-1.8%[a]	-0.8%[a]	4.8 %	40.5 %	-0.7 %	-0.8 %	6.9 %	45.9 %	-1.16
Post-announcement									
CAR (0, 1)	-1.7%[a]	-1.0%[a]	4.1 %	39.2 %	-0.3 %	-0.4 %	5.6 %	45.9 %	-1.75*
CAR (0, 3)	-2.0%[a]	-1.2%[a]	5.0 %	37.8 %	-0.6 %	-1.0%[a]	6.4 %	43.2 %	-1.46

Social score

	Panel A: High Social Score: (Social Score > 75th percentile) (n= 75) - US Sample				Panel B: Low Social Score: (Social Score < 25th percentile) (n= 74) - US Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.8%[a]	-0.2 %	4.4 %	45.3 %	-0.3 %	-0.1 %	5.7 %	48.6 %	-0.54
CAR (-1, 0)	-0.8%[a]	-0.8%[a]	4.0 %	44.0 %	-0.4 %	-0.7%[a]	5.1 %	40.5 %	-0.53
Announcement									
CAR (-3, 3)	-0.7%[a]	-0.7 %	6.6 %	46.7 %	-1.4%[b]	-0.1 %	7.8 %	48.6 %	0.66
CAR (-2, 2)	-0.7%[a]	-0.7%[b]	5.9 %	46.7 %	-1.8%[a]	-1.5%[a]	7.2 %	40.5 %	0.99
CAR (-1, 1)	-0.6%[a]	-0.6 %	6.2 %	46.7 %	-1.1%[a]	-1.0%[a]	6.3 %	37.8 %	0.51
CAR (-1, 2)	-0.6%[a]	-0.6%[c]	5.6 %	49.3 %	-1.5%[a]	-1.3%[a]	7.2 %	37.8 %	0.91
Post-announcement									
CAR (0, 1)	-0.6%[a]	-0.6 %	6.1 %	49.3 %	-1.0%[a]	-0.9%[a]	6.0 %	39.2 %	0.47
CAR (0, 3)	-0.7%[a]	-0.7 %	6.2 %	45.3 %	-1.4%[a]	-1.6%[a]	6.9 %	37.8 %	0.73

Governance score

	Panel A: High Governance Score: (Governance Score > 75th percentile) (n= 75) - US Sample				Panel B: Low Governance Score: (Governance Score < 25th percentile) (n= 74) - US Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-1.1%[a]	-1.1%[a]	0.049	50.7 %	0.2 %	0.2 %	0.045	54.7 %	-1.65*
CAR (-1, 0)	-1.3%[a]	-0.7%[a]	0.047	37.3 %	0.2 %	0.0 %	0.039	52.0 %	-2.16**
Announcement									
CAR (-3, 3)	-1.9%[a]	-1.1%[b]	0.072	41.3 %	0.3 %	0.5 %	0.070	58.7 %	-1.91*
CAR (-2, 2)	-1.4%[a]	-0.2 %	0.063	46.7 %	0.2 %	-0.3 %	0.065	48.0 %	-1.54
CAR (-1, 1)	-1.9%[a]	-1.1%[a]	0.058	40.0 %	0.4 %	0.2 %	0.062	52.0 %	-2.38**
CAR (-1, 2)	-1.7%[a]	-1.0%[a]	0.063	44.0 %	0.5 %	0.0 %	0.062	52.0 %	-2.19**
Post-announcement									
CAR (0, 1)	-1.7%[a]	-0.8%[a]	0.055	41.3 %	0.4 %	0.5 %	0.061	57.3 %	-2.17**
CAR (0, 3)	-1.9%[a]	-1.3%[a]	0.067	37.3 %	0.3 %	0.3 %	0.062	52.0 %	-2.08**

5.2.3 Univariate study results – EUR Sample

Tables 11, 12 and 13 report the cumulative returns for EUR based firms with respect to their ESG rating over the sample period and across multiple event windows. Panel A's show that abnormal returns for EUR based firms with highest ESG rating are positive and statistically significant in most of the event windows and all ESG dimensions. The gains for acquirers with high ESG rating vary from -0.1% to 1.6%, indicating significant value creation following the deal announcements. Notably, all but one result are positive for the high ESG acquirers. Panel B's report that EUR based firms with low ESG rating on average perform better than high ESG acquirers. However, there is large variability in the returns for low ESG acquirers as the results range from -1.7% to 3.6%. The results therefore indicate similar results to the two previous results that low rated ESG firms are able to create more value through M&A activities compared to high ESG firms in the Europe.

Contrary to our hypothesis, the low environmental scoring acquirers enjoy more positive returns than high environmental scoring acquirers. However, as this result does not distinguish COVID-19 sample period, the result does not provide conclusive evidence regarding our hypothesis. Additionally, the positive results could be translated to the COVID-19 era, which would prove our hypothesis to be correct. Focusing on the next ESG dimension, the abnormal returns for firms with high social scores are lower and statistically significant in 4 of the event windows than firms with low social scores. This could be due to the cost-benefit concerns of investors that we hypothesized previously, as social actions such as competitive wage structure, social benefits among others are highly expensive and may not provide the competitive advantage in the eyes of the investors.

Table 7. Acquirers' gains with regard to the environmental, social and governance score – EUR Sample

These tables represent a comparison between high- and low environmental, social and governance score acquirers: the tables report the cumulative abnormal returns (CARs) for a sample of 50 acquiring firms in the EUR between 1 January 2015 and 19 April 2021. Panels A and B represent the mean and median CARs, standard deviation and percentage of firms with positive CARs. Panel C reports the statistical significance of the difference between the means of the two samples. ***, **, *, indicates statistical significance at the 1%, 5% or 10% level in Panel

C, respectively. Superscripts a, b and c denote significance at 1%, 5% and 10 levels% in Panel A and B, respectively.

Environmental score

	Panel A: High Env. Score: (Environmental Score > 75th percentile) (n= 25) - EUR Sample				Panel B: Low Env. Score: (Environmental Score < 25th percentile) (n= 25) - EUR Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	1.0%[a]	0.9%[a]	0.06	57.1 %	2.3%[a]	2.8%[a]	0.05	64.3 %	-0.96
CAR (-1, 0)	0.7%[b]	0.7%[b]	0.06	50.0 %	2.2%[a]	2.4%[a]	0.04	71.4 %	-1.24
Announcement									
CAR (-3, 3)	0.7%[a]	0.7%[a]	0.05	71.4 %	0.4 %	5.2%[a]	0.14	57.1 %	0.22
CAR (-2, 2)	0.9%[a]	0.9%[a]	0.05	71.4 %	3.3%[a]	3.1%[a]	0.06	64.3 %	-2.04**
CAR (-1, 1)	1.3%[a]	1.3%[a]	0.05	64.3 %	1.6%[a]	2.3%[a]	0.04	57.1 %	-0.29
CAR (-1, 2)	0.4 %	0.3 %	0.05	57.1 %	3.4%[a]	4.1%[a]	0.05	71.4 %	-2.18**
Post-announcement									
CAR (0, 1)	1.5%[a]	1.5%[a]	0.05	42.9 %	1.3%[a]	3.0%[a]	0.05	64.3 %	0.12
CAR (0, 3)	0.5%[c]	0.5%[c]	0.06	57.1 %	0.0 %	4.5%[a]	0.15	64.3 %	0.32

Social score

	Panel A: High Social Score: (Social Score > 75th percentile) (n= 25) - EUR Sample				Panel B: Low Social Score: (Social Score < 25th percentile) (n= 25) - EUR Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	1.1%[a]	1.0%[a]	0.04	64.0 %	2.4%[a]	0.8%[b]	0.06	64.0 %	-1.53
CAR (-1, 0)	0.7%[a]	0.7%[a]	0.04	56.0 %	2.9%[a]	1.3%[a]	0.05	64.0 %	-2.34**
Announcement									
CAR (-3, 3)	1.5%[a]	1.5%[a]	0.06	68.0 %	0.7 %	1.9 %	0.12	56.0 %	0.66
CAR (-2, 2)	1.6%[a]	1.6%[a]	0.04	72.0 %	2.5%[a]	1.3%[b]	0.08	60.0 %	-0.93
CAR (-1, 1)	0.3%[c]	0.3%[c]	0.04	60.0 %	2.2%[a]	0.8 %	0.08	64.0 %	-2.29**
CAR (-1, 2)	1.1%[a]	1.1%[a]	0.04	72.0 %	2.8%[a]	1.4%[a]	0.07	60.0 %	-1.93*
Post-announcement									
CAR (0, 1)	0.1 %	0.0 %	0.04	52.0 %	2.4%[a]	1.9%[a]	0.07	64.0 %	-2.80***
CAR (0, 3)	1.0%[a]	1.0%[a]	0.06	64.0 %	1.4%[a]	2.0 %	0.13	64.0 %	-0.37

Governance score

	Panel A: High Governance Score: (Governance Score > 75th percentile) (n= 25) - EUR Sample				Panel B: Low Governance Score: (Governance Score < 25th percentile) (n= 25) - EUR Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.1 %	0.6%[a]	0.04	60.0 %	1.1%[a]	0.2 %	0.06	52.0 %	-1.71*
CAR (-1, 0)	0.1 %	0.1 %	0.03	56.0 %	0.8%[b]	-0.1 %	0.06	48.0 %	-1.01
Announcement									
CAR (-3, 3)	0.1 %	0.1 %	0.04	60.0 %	-1.4 %	-0.6 %	0.12	44.0 %	1.07
CAR (-2, 2)	0.4%[b]	0.4%[b]	0.04	60.0 %	0.0 %	-0.7 %	0.07	44.0 %	0.39
CAR (-1, 1)	0.4%[a]	0.5%[a]	0.03	68.0 %	-0.3 %	-0.7 %	0.07	48.0 %	1.04
CAR (-1, 2)	0.4%[a]	0.4%[b]	0.04	68.0 %	0.0 %	-1.1%[b]	0.07	36.0 %	0.57
Post-announcement									
CAR (0, 1)	0.1 %	0.1 %	0.04	52.0 %	-0.2 %	-0.4 %	0.07	48.0 %	0.51
CAR (0, 3)	0.0 %	0.0 %	0.04	60.0 %	-1.7 %	-1.7 %	0.12	44.0 %	1.04

5.2.4 Univariate study results – EM Sample

Tables 14, 15 and 16 report the cumulative returns for EM based firms with respect to their ESG rating over the sample period and across multiple event windows. Panel A's show that abnormal mean and median returns for EM based firms with highest ESG rating are negative and statistically significant in most of the event windows and in all ESG dimensions. The losses for acquirers with high ESG rating vary from 0.1% to -0.8% indicating significant value destruction following the deal announcements. Panel B's report that EM based firms with low ESG rating on average perform better than high ESG acquirers. There is larger variability in the returns for low ESG acquirers as the results range from -0.7% to 1.3%. The results indicate that like in other samples, low scoring ESG firms are able to create more value through M&A activities compared to high ESG firms in the Europe. As the negative returns in high or low ESG scoring firms are not as low as the negative returns in the other samples, our hypothesis of Emerging Markets experiencing the worse impact of COVID-19 could be untrue. Low environmental score seems to provide the most positive returns, which intuitively makes sense as high costing environmental actions are not valued as much in the Emerging Markets than, for example in Europe; EM has the lowest median environmental rating of all the three datasets (see Table 5). And like discussed before, Environmental Performance Index 2020 (EPI) ranks only European countries in their top 10, while India for example, part of Emerging Markets dataset, ranks 168th out of 180 countries.

Table 8. Acquirers' gains with regard to the environmental, social and governance score - EM Sample

These tables represent a comparison between high- and low environmental score acquirers: the tables report the cumulative abnormal returns (CARs) for a sample of 86 acquiring firms in the Emerging Markets between 1 January 2015 and 19 April 2021. Panels A and B represent the mean and median CARs, standard deviation and percentage of firms with positive CARs. Panel C reports the statistical significance of the difference between the means of the two samples. ***, **, *, indicates statistical significance at the 1%, 5% or 10% level in Panel C, respectively. Superscripts a, b and c denote significance at 1%, 5% and 10% level in Panel A and B, respectively.

Environmental score

	Panel A: High Env. Score: (Environmental Score > 75th percentile) (n= 43) - EM Sample				Panel B: Low Env. Score: (Environmental Score < 25th percentile) (n= 43) - EM Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.8%[a]	-0.2 %	0.04	46.9 %	0.9%[a]	0.1 %	0.04	53.1 %	-1.09
CAR (-1, 0)	-0.5%[a]	-0.5%[a]	0.03	56.3 %	0.2%[a]	0.4%[a]	0.03	53.1 %	-1.20
Announcement									
CAR (-3, 3)	-0.1 %	-0.1 %	0.06	62.5 %	1.3%[a]	0.9%[a]	0.05	65.6 %	-1.22
CAR (-2, 2)	-0.2 %	-0.2 %	0.04	50.0 %	0.1 %	0.0 %	0.04	43.8 %	-0.33
CAR (-1, 1)	-0.4%[a]	-0.4%[a]	0.04	56.3 %	0.1 %	0.2%[a]	0.03	53.1 %	-0.69
CAR (-1, 2)	-0.4%[a]	-0.4%[a]	0.04	56.3 %	0.0 %	-0.1 %	0.03	46.9 %	-0.51
Post-announcement									
CAR (0, 1)	-0.3%[a]	-0.3%[a]	0.04	53.1 %	-0.2%[a]	0.0 %	0.03	46.9 %	0.76
CAR (0, 3)	0.1 %	0.1 %	0.05	68.8 %	0.3 %	0.1 %	0.04	53.1 %	-0.30

Social score

	Panel A: High Social Score: (Social Score > 75th percentile) (n= 43) - EM Sample				Panel B: Low Social Score: (Social Score < 25th percentile) (n= 43) - EM Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.8%[a]	-0.4%[a]	0.04	34.9 %	-0.3%[b]	0.3 %	0.04	55.8 %	-0.64
CAR (-1, 0)	-0.5%[a]	-0.5%[a]	0.03	51.2 %	-0.3%[a]	0.2%[a]	0.03	58.1 %	-0.36
Announcement									
CAR (-3, 3)	-0.6%[b]	-0.6%[b]	0.05	48.8 %	0.3 %	0.0 %	0.06	51.2 %	-0.87
CAR (-2, 2)	0.1 %	0.1 %	0.04	51.2 %	-0.7%[a]	-0.7%[c]	0.04	37.2 %	1.15
CAR (-1, 1)	0.0 %	0.0 %	0.03	55.8 %	-0.4%[a]	0.0 %	0.04	48.8 %	0.59
CAR (-1, 2)	0.0 %	0.0 %	0.04	53.5 %	-0.4%[a]	-0.2 %	0.04	44.2 %	0.58
Post-announcement									
CAR (0, 1)	-0.6%[a]	-0.6%[a]	0.03	58.1 %	-0.1 %	-0.3%[b]	0.04	41.9 %	1.09
CAR (0, 3)	-0.4%[b]	-0.4%[b]	0.04	58.1 %	0.6%[a]	0.0 %	0.05	51.2 %	-0.37

Governance score

	Panel A: High Governance Score: (Governance Score > 75th percentile) (n= 43) - EM Sample				Panel B: Low Governance Score: (Governance Score < 25th percentile) (n= 43) - EM Sample				Panel C
Event Window duration	Mean	Median	SD	Positive	Mean	Median	SD	Positive	t-stat
Pre-announcement									
CAR (-3, 0)	-0.5%[a]	-0.6%[a]	0.04	41.9 %	0.0 %	0.0 %	0.04	52.3 %	-0.59
CAR (-1, 0)	-0.4%[a]	-0.4%[a]	0.03	46.5 %	0.1 %	0.1 %	0.03	54.5 %	-0.70
Announcement									
CAR (-3, 3)	0.1 %	0.1 %	0.05	51.2 %	-0.4 %	0.1 %	0.06	52.3 %	0.49
CAR (-2, 2)	-0.4%[b]	-0.4%[b]	0.04	34.9 %	-0.3 %	-0.3 %	0.06	45.5 %	-0.14
CAR (-1, 1)	-0.6%[a]	-0.6%[a]	0.03	46.5 %	-0.4%[b]	-0.1 %	0.05	45.5 %	-0.28
CAR (-1, 2)	-0.7%[a]	-0.7%[a]	0.03	41.9 %	-0.3 %	-0.1 %	0.05	43.2 %	-0.54
Post-announcement									
CAR (0, 1)	-0.2%[b]	-0.7%[b]	0.03	48.8 %	-0.1 %	-0.2 %	0.05	45.5 %	-0.16
CAR (0, 3)	-0.6%[a]	-0.6%[a]	0.04	60.5 %	-0.2 %	0.1 %	0.05	52.3 %	0.88

5.3 Simple multivariate analysis with main ESG variables

In this section, motivated by the study conducted by Tampakoudis et.al (2021), we regress the acquirers' cumulative abnormal returns against the main variables of interest; environmental score, social score, governance score and COVID-19. We separate the sample periods to focus on time before and during COVID-19 pandemic in order to distinguish the COVID-19 impact. Following the previous methods, we conduct the analysis on four different samples; all three samples bundled together, the US sample, the Europe sample and the EM sample. We regress the results for the four samples using a following formula:

$$\begin{aligned} \mathrm{CAR_{it}} = \ & \alpha + \beta_1 \mathrm{SOC} + \beta_2 \mathrm{ENV} + \beta_3 \mathrm{COG} + \beta_4 \mathrm{COVID-19} + \beta_5 \mathrm{COVID-19} \times \mathrm{SOC} \\ & + \beta_6 \mathrm{COVID-19} \times \mathrm{ENV} + \beta_7 \mathrm{COVID-19} \times \mathrm{COG} \end{aligned}$$

where the dependent variable $\mathrm{CAR_{it}}$ denotes the cumulative abnormal return (CAR) around a merger for an acquirer i in an event window t. SOC is acquirers' social score one year prior the transaction, ENV is acquirers' environmental score one year prior the transaction and COG is acquirers' corporate governance score one year prior the transaction. $\mathrm{COVID-19}$ is a dummy variable that equals one if the acquisition was announced after March 11, 2020, the day when WHO announced COVID-19 to be a global pandemic. The cumulative abnormal returns are calculated as follows:

$$\mathrm{CAR_i}(t_1 t_2) = \sum_{t=t_1}^{t_2} \mathrm{R_{i,t}} - \mathrm{E}\,(\mathrm{R_{i,t}})$$

where $\mathrm{R_{i,t}}$ denotes the return of the acquirer i during a period t. $\mathrm{E}\,(\mathrm{R_{i,t}})$ represents the expected return during the same period. In this regression, the proxy for expected return is based on the benchmark index sector in which the acquirer operates in.

In the tables presented for all four samples, the symbols ***, ** and * indicate statistical significance at the 1%, 5% or 10% level, respectively, while t-statistics are provided in the brackets.

5.3.1 Simple multivariate analysis – All Samples

Table 17 reports a summary regarding the statistics of the simple multivariate analysis for all samples. COVID-19 seems to have had a mixed impact on ESG M&A transactions, failing to reject our first hypothesis based on this. COVID-19 has had negative effect based on the acquirers' governance score pre and during announcement with the effect being the most negative (-0.1239) when the event window was the longest (-3, 3). This could be due to the previously mentioned failure to benefit from market misevaluations during the pandemic. The announced acquisitions done by companies with high governance score being the more properly valuated and less risky ones that are executed at the expense of the incorrectly valuated, riskier ones. Or, the acquirer overvalues the less risky company due to the pandemic where safety is appreciated, creating a transfer of wealth from acquirer shareholders to target shareholders that is seen in the drop in share value. Other reasoning could also be a general negative sentiment towards highly expensive governance costs during COVID-19.

However, the social score of the acquirer during COVID-19 has had a positive effect, with the highest effect (0.1130) happening during the acquisition announcement with an event window of (-1, 2). The reasoning for the result could derive from the aforementioned stakeholder theory; stakeholders are willing to help companies that are socially responsible during times of crisis (Servaes and Tamayo, 2013). Enhanced reputation and the benefit of already conducting major socially responsible investments that do not have to be made in the future could also be arguments towards the positive effect.

Interestingly, environmental score does not seem to have any impact during COVID-19 crisis, which could indicate that our hypothesis for Europe may not be true. Environmental score prior to COVID-19 seemed to have minor negative effect pre-announcement. All other ESG dimensions prior to COVID-19 do not possess any significant impact on market reaction, while COVID-19 itself also did not have any effect. This could indicate that the effect found by Tampakoudis et.al (2021) for the US market is indeed diminished like we hypothesized.

Table 9. The effect of ESG rating on acquiring firms' returns before and during the COVID-19 pandemic – All Samples

Event Window duration	ENV	SOC	COG	COVID-19	COVID-19xENV	COVID-19xSOC	COVID-19xCOG
Pre-announcement							
CAR (-3, 0)	-0.0227*	0.0129	-0.0145	0.0483	0.0235	0.0012	-0.0704*
	(-1.84)	(0.89)	(-1.31)	(1.53)	(0.67)	(0.03)	(-1.89)
CAR (-1, 0)	-0.0194*	0.0059	-0.0125	-0.0003	0.0076	0.0478	-0.0329
	(-1.75)	(0.46)	(-1.26)	(-0.01)	(0.24)	(1.30)	(-0.98)
Announcement							
CAR (-3, 3)	-0.0199	0.0198	-0.0103	0.0794	-0.0380	0.0496	-0.1239**
	(-1.13)	0.959	-0.65	1.759	('-0.77)	0.866	-(2.32)
CAR (-2, 2)	-0.0221	0.0240	-0.0124	0.0367	-0.0356	0.0877*	-0.0979**
	(-1.45)	1.34	-0.898	0.934	(-0.82)	1.758	(-2.11)
CAR (-1, 1)	-0.0229	0.0169	-0.0145	0.0111	-0.0152	0.0689	-0.0593
	(-1.63)	1.032	(-1.15)	0.308	(-0.38)	1.509	(-1.40)
CAR (-1, 2)	-0.0209	0.0190	-0.0177	0.0005	-0.0502	0.1130**	-0.0566
	(-1.42)	1.103	(-1.33)	0.014	(-1.21)	2.357	(-1.27)
Post-announcement							
CAR (0, 1)	-0.0158	0.0129	-0.0162	0.0295	-0.0230	0.0406	-0.0469
	(-1.20)	0.837	(-1.37)	0.871	(-0.62)	0.945	(-1.17)
CAR (0, 3)	-0.0094	0.0093	-0.0099	0.0498	-0.0619	0.0674	-0.0740
	(-0.60)	0.506	(-0.70)	1.237	(-1.39)	1.318	(-1.56)
N	564	564	564	564	564	564	564
Region	All	All	All	All	All	All	All

5.3.2 Simple multivariate analysis– US sample

Table 18 reports summary statistics of simple regression for the US sample. COVID-19 has not had major significant effect on ESG M&A transactions in the US; the only statistically significant impact is a positive effect of company social score during acquisition announcement window. This result supports the arguments discussed above in the "All samples" section. COVID-19 by itself has not had any significant effect on acquisition market reaction overall.

Prior to the COVID-19, firm-level governance variable is negatively related to short-term announcement returns. Prior to COVID-19, the results could be due to the arguments on the theory of optimal corporate governance (Weir, Laing and McKnight, 2002). The theory on optimal corporate governance implies that employing too strong corporate governance mechanisms on the management, encourage them to seek other substitute action which will lead to even higher costs (Claessens and Yurtoglu, 2013). These actions could be seen as put into hold during COVID-19 crisis, like all other actions unrelated to the main operations and thus survival of the company.

Overall, it seems that the findings by Tampakoudis et.al (2021), as we hypothesized, are clearly diminished in our sample, even more than we predicted. The US does not seem to experience significant negative effect from COVID-19 anymore contrary to Tampakoudis et.al (2021). The S&P 500 has continued to rise after the spring 2020 crash (see Figure 1), providing more arguments that our contradicting findings to that of Tampakoudis et.al (2021) are relevant.

Table 10. The effect of ESG rating on acquiring firms' returns before and during the COVID-19 pandemic – US Sample

Event Window duration	ENV	SOC	COG	COVID-19	COVID-19xENV	COVID-19xSOC	COVID-19xCOG
Pre-announcement							
CAR (-3, 0)	-0.0423**	0.0315	-0.0215	0.0232	0.0496	-0.0498	-0.0059
	(-2.38)	(1.47)	(1.42)	(0.51)	(1.01)	(-0.92)	(-0.11)
CAR (-1, 0)	-0.0245	0.0096	-0.0203	-0.0151	-0.0117	0.0157	0.0396
	(-1.52)	(0.49)	(-1.48)	(-0.37)	(0.35)	(0.81)	(-0.23)
Announcement							
CAR (-3, 3)	-0.0468*	0.0591**	-0.0429**	0.0461	-0.0297	0.0112	-0.0575
	(-1.90)	(1.99)	(-2.05)	(0.74)	(-0.44)	(0.15)	(-0.75)
CAR (-2, 2)	-0.0329	0.0363	-0.0303	-0.0281	-0.0617	0.1341*	-0.0467
	(-1.46)	(1.34)	(-1.58)	(-0.49)	(-0.99)	(1.96)	(-0.66)
CAR (-1, 1)	-0.0319	0.0308	-0.0399**	0.0028	-0.0240	0.0609	-0.0394
	(-1.51)	(1.21)	(-2.22)	(0.05)	(-0.41)	(0.95)	(-0.59)
CAR (-1, 2)	-0.0284	0.0311	-0.0402**	-0.0469	-0.0737	0.1532**	-0.0241
	(-1.28)	(1.16)	(-2.12)	(-0.83)	(-1.20)	(2.26)	(-0.35)
Post-announcement							
CAR (0, 1)	-0.0322	0.0312	-0.0361**	0.0330	-0.0420	0.0515	-0.0542
	(-1.62)	(1.30)	(-2.14)	(0.65)	(-0.77)	(0.85)	(-0.87)
CAR (0, 3)	-0.0292	0.0376	-0.0379**	0.0379	-0.0816	0.0912	-0.0781
	(-1.32)	(1.41)	(-2.01)	(0.68)	(-1.34)	(1.36)	(-1.13)
N	293	293	293	293	293	293	293
Region	US	US	US	US	US	US	US

5.3.3 Simple multivariate analysis – EUR sample

Table 19 reports summary statistics of the simple regression for the EUR sample. COVID-19 has had negative effect on ESG M&A transactions, but with the governance score having the only statistically significant negative effect on two event windows (-3, 0 and -2, 2). The negative governance score could also be explained by too conservative approach to risk-taking, failing to capture the misevaluations in the market. Why the misevaluations happen in largely

developed European markets and not in the US could be due to the cross-border nature; cross-border acquisitions are harder to evaluate. For example Mateev and Andonov (2018) find target firm shareholders earning substantially larger premiums in cross-border than in domestic acquisitions, irrespective of the means of payment. If European acquirers tend to overpay for cross-border targets, it could be seen reversely that the acquirers also fail identify the undervalued targets in the cross-border deals. However, we can't conclude this argument but could be seen as interesting continuation to our next analysis that has the cross-border variable.

With our hypothesis regarding the positive impact of environmental score, it seems that COVID-19 has had slightly negative, but not statistically significant, impact that contradicts with our hypothesis. The social score also provides similar results and thus we can't convert our initial hypothesis regarding environmental score to social one. Interestingly COVID-19 overall has had significant positive effect on acquisitions that are not measured with ESG rating. This could be that acquirers are able to find the potential undervalued targets based on other indicators than the ESG rating.

Table 11. The effect of ESG rating on acquiring firms' returns before and during the COVID-19 pandemic – EUR Sample

Event Window duration	ENV	SOC	COG	COVID-19	COVID-19xENV	COVID-19xSOC	COVID-19xCOG
Pre-announcement							
CAR (-3, 0)	0.0009	-0.0015	-0.0256	0.2001*	-0.0371	0.0195	-0.2352**
	(0.02)	(-0.03)	(-0.75)	(1.96)	(-0.34)	(0.13)	(-2.11)
CAR (-1, 0)	-0.0236	0.0033	-0.0140	0.1445	0.0285	-0.0119	-0.1782
	(-0.60)	(0.07)	(-0.42)	(1.45)	(0.27)	(-0.08)	(-1.64)
Announcement							
CAR (-3, 3)	0.0364	-0.0147	0.0189	0.2690*	-0.1339	0.0501	-0.2697
	(0.60)	(-0.21)	(0.37)	(1.77)	(-0.83)	(0.23)	(-1.62)
CAR (-2, 2)	0.0171	-0.0099	0.0049	0.2440*	-0.0908	0.0453	-0.2540*
	(0.33)	(-0.16)	(0.11)	(1.89)	(-0.66)	(0.24)	(-1.80)
CAR (-1, 1)	-0.0033	-0.0161	0.0175	0.1411	-0.0042	0.0544	-0.2075
	(-0.07)	(-0.29)	(0.44)	(1.12)	(-0.03)	(0.32)	(-1.61)
CAR (-1, 2)	0.0007	-0.0152	0.0088	0.2061*	-0.0557	0.0314	-0.2201
	(0.01)	(-0.26)	(0.21)	(1.67)	(-0.43)	(0.18)	(-1.63)
Post-announcement							
CAR (0, 1)	0.0181	-0.0315	0.0070	0.1415	0.0077	-0.0298	-0.1336
	(0.41)	(-0.60)	(0.19)	(1.27)	(0.07)	(-0.18)	(-1.09)
CAR (0, 3)	0.0333	-0.0252	0.0201	0.2145	-0.0564	-0.0654	-0.1388
	(0.58)	(-0.37)	(0.41)	(1.48)	(-0.37)	(-0.31)	(-0.87)
N	99	99	99	99	99	99	99
Region	EUR	EUR	EUR	EUR	EUR	EUR	EUR

5.3.4 Simple multivariate analysis – EM sample

Table 20 reports summary statistics of the simple regression for the EM sample. We do not find any significant effect on any of the variables in question. This seems to indicate that our hypothesis regarding Emerging Markets having the most negative effect by COVID-19 to be untrue, especially when taking into account the previous results in the CAR and univariate analyses.

As Emerging Markets are also subject to cross-border scenarios, these results could indicate our discussion regarding inability to capture misevaluations in Europe to be incorrect. However, as Emerging Markets are characterized with lower level of corporate governance, the effect of conservative risk-taking may not be as prevalent in EM. However we do not find statistically significant negative effect on the increase in corporate governance variables, which might prove this argument to be false. Because of the lack of statistically significant results, we fail to find

evidence supporting our hypothesis 3b regarding the Emerging Markets having the most negative effect.

Table 12. The effect of ESG rating on acquiring firms' returns before and during the COVID-19 pandemic – EM Sample

Event Window duration	ENV	SOC	COG	COVID-19	COVID-19xENV	COVID-19xSOC	COVID-19xCOG
Pre-announcement							
CAR (-3, 0)	-0.0106	-0.0042	-0.0012	-0.0107	0.0561	0.0524	-0.0825
	(-0.66)	(-0.24)	(-0.08)	(-0.21)	(1.02)	(0.85)	(-1.51)
CAR (-1, 0)	-0.0129	0.0017	-0.0020	-0.0316	0.0190	0.0459	-0.0170
	(-1.07)	(0.13)	(-0.17)	(0.40)	(0.46)	(0.99)	(-0.41)
Announcement							
CAR (-3, 3)	-0.0159	-0.0148	0.0284	-0.0049	0.0267	0.1167	-0.1308
	(0.51)	(0.58)	(0.23)	(0.95)	(0.75)	(0.21)	(0.11)
CAR (-2, 2)	-0.0276	0.0186	0.0026	0.0201	0.0487	0.0081	-0.0894
	(-1.51)	(0.91)	(0.15)	(0.73)	(0.44)	(0.91)	(0.15)
CAR (-1, 1)	-0.0219	0.0110	0.0056	-0.0263	0.0128	0.0569	-0.0354
	(0.17)	(0.54)	(0.72)	(0.60)	(0.82)	(0.36)	(0.52)
CAR (-1, 2)	-0.0230	0.0122	0.0022	-0.0277	0.0138	0.0558	-0.0320
	(0.15)	(0.50)	(0.89)	(0.58)	(0.80)	(0.37)	(0.56)
Post-announcement							
CAR (0, 1)	-0.0087	0.0080	0.0015	-0.0142	0.0163	0.0237	-0.0163
	(0.58)	(0.65)	(0.92)	(0.77)	(0.76)	(0.69)	(0.76)
CAR (0, 3)	-0.0044	-0.0109	0.0237	-0.0125	-0.0075	0.0761	-0.0464
	(0.82)	(0.61)	(0.20)	(0.83)	(0.91)	(0.30)	(0.47)
N	172	172	172	172	172	172	172
Region	EM	EM	EM	EM	EM	EM	EM

5.4 Multivariate analysis

In our last result section, we regress the returns of acquirers against the main variables of interest; environmental, governance and social score, and a set of control variables that have been proved to affect the gains of acquirers (see Section 4.3.4). Due to lack of available data on independent variables in the Emerging Markets, we decide to drop the Emerging Markets sample at this stage and focus our investigation on the EUR and US samples. Because of this, the "All samples" set is only combined EUR and US samples. As the results from Emerging Markets were not statistically significant in the previous analyses and the sample size (N) was significantly the smallest compared to EUR and US that lead to inability to find data for the independent variables, we believe this exclusion does not tarnish the relevancy of the results.

Furthermore, we focus our investigation on the effect of CSR performance of acquirers' gains on the periods before and during the pandemic.

We conduct a following regression for the cumulative abnormal returns (CAR):

$$\mathrm{CAR}_{it} = \alpha + \beta_i \mathrm{ESG\ rating}_i + \sum_{j=1}^{m} \lambda_j X_{ij} + \varepsilon_i$$

where the dependent variable, CAR_{it} is the cumulative abnormal return of the acquirer from deal i from the period t as estimated in the equation (6). The intercept α measures the excess returns after controlling for the effects of CSR performance measured using ESG rating and a set of m control variables included in vector X_{ij}. . ***, **, *, indicates statistical significance at the 1%, 5% or 10% level, respectively, while t-statistics are provided in the brackets.

The name of each model represents the focus area of each ESG dimension. The whole sample period is taken into consideration in the whole models, while the COVID-19 sample period is taken into consideration when comparing the combined effect of COVID-19 and each ESG dimension. Thus, the results between COVID-19 x ESG dimension (COVID-19 period) and COVID-19 (whole sample period) differ from each other. Significant difference between the results between time periods provides some robustness to the during COVID-19 results, if not taking into consideration the possibility of other significant events happening during the pre-COVID-19 sample period.

5.4.1 Multivariate analysis – All samples

Table 21 reports summary statistics of the multivariate analysis for All samples. Based on the findings, we find corporate governance score and COVID-19 to have negative effect (-0.1255) at 10% significance level, while the social score and COVID-19 has slight positive effect (0.0362) at 10% significance level. This is consistent with previous results, where we argued that high governance score has negative effect on acquirers' risk-taking behavior, failing to take advantage of possible misevaluations in the COVID-19 landscape. The slight positive effect in social score is also in line with the previous results that could be explained by stakeholder theory. Like previously found, COVID-19 seems to not have any significant effect on

environmental scoring market reaction. The independent variables do not seem to have high explanatory effect on the cumulative abnormal returns when controlling for any of the ESG dimensions.

Table 13. The effect of ESG rating on acquiring firms returns before and during COVID-19 pandemic using multivariate analysis with control variables – All samples

Dependent: CAR (-3, 3)	Model 1 (ENV)	Model 2 (SOC)	Model 3 (COG)
ENV	0.0108		
COVID-19 x ENV	-0.0506		
SOC		0.0362*	
COVID-19 x SOC		-0.0046	
COG			-0.0138
COVID-19 x COG			-0.1255*
COVID-19	0.0423	0.0171	0.0928**
CROSS	0.0009	-0.0008	0.0033
SHARES	0.0042	0.0044	0.0031
FRIENDLY	0.0235	0.0311	0.0197
TOEHOLD	0.0011	0.0005	0.0023
RELSIZE	-0.0075	-0.0085*	-0.0066
LNSIZE	-0.0068**	-0.0086**	-0.0058**
ROA	0.1052	0.0884	0.0929
DEBT	-0.0063	-0.0064	-0.0061
LEG	0.0033	0.0028	0.0038
YEAR	0.0012	0.0003	0.0016
DIV	0.0031	0.0033	0.0030
IND	-0.0010	-0.0005	-0.0009
Intercept	0.0444	0.0498*	0.0472*
Adjusted R^2 (%)	0.0	0.0	0.0
N	392	392	392

5.4.2 Multivariate analysis – US sample

Table 22 reports summary statistics of the multivariate analysis for the US sample. COVID-19 has not had any significant effect on market reaction in the US. Increase in corporate governance has had slight negative effect pre-COVID-19 period, but we do not find statistically significant effect during the COVID-19 period. This could be explained by the high governance making companies more conservative for a reason in highly developed financial markets where misevaluations do not occur at such significance. Because of this, the more conservative approach is appreciated due to the possibility of "flight to quality" behavior by investors, shifting towards more safe assets. However, even if we fail to find statistically significant effects, the effect is still negative and may prove our arguments untrue. But most importantly, these results seem to prove our hypothesis to be correct; the negative effect of COVID-19 on ESG M&A

transactions in the US is lesser than the one found by Tampakoudis et.al. (2021). We do not find statistically significant negative effect on all three ESG dimensions. Because of this, we accept our hypothesis 3c.

Table 14. The effect of ESG rating on acquiring firms returns before and during COVID-19 pandemic using multivariate analysis with control variables – US sample

Dependent: CAR (-3, 3)	Model 1 (ENV)	Model 2 (SOC)	Model 3 (COG)
ENV	-0.0126		
COVID-19 x ENV	-0.0502		
SOC		0.0211	
COVID-19 x SOC		0.0252	
COG			-0.0394*
COVID-19 x COG			-0.0680
COVID-19	0.0190	-0.0265	0.0360
CROSS	-0.0082	-0.0077	-0.0049
SHARES	-0.0202	-0.0201	-0.0240
FRIENDLY	-0.0579	-0.0522	-0.0469
TOEHOLD	0.0333	0.0259	0.0390
RELSIZE	-0.0119	-0.0151*	-0.0128
LNSIZE	-0.0055	-0.0090**	-0.0062
ROA	0.1564*	0.1268	0.1353
DEBT	-0.0025	-0.0035	-0.0022
LEG	-0.0829	-0.0786	-0.0709
YEAR	0.0005	-0.0001	0.0012
DIV	-0.0024	-0.0021	-0.0033
IND	-0.0008	0.0001	-0.0002
Intercept	0.1497	0.1633	0.1565
Adjusted R^2 (%)	-0.7	-0.8	0.8
N	293	293	293

5.4.3 Multivariate analysis – EUR sample

Table 23 reports summary statistics of the multivariate analysis for the EUR sample. The findings found in this sample provide the most significant findings. COVID-19 seems to have had significant negative effect on all ESG dimensions, supporting the shareholder theory and could also support our hypothesis 2 regarding the cost-benefit concerns explaining some of the results.

Starting from the environmental score, we find negative effect (-0.2501) at 5% significance level. Similar findings could not be found from our previous results, and this hugely differs from our hypothesis stating a possible positive effect. Based on this, we have to reject our hypothesis 3a. In addition, the social score has significant negative effect (-0.3028) at 10% significance level, while the governance score has significant negative effect (-0.3035) at 10%

significance level also. The increase in governance score and its negative effect on market reaction during COVID-19 provides more evidence of the possibility of too conservative risk-taking by highly governed companies.

While the negative impact of environmental and social score provides evidence of the shareholder theory, the results could also be explained with the "flight to quality" effect. In environmental score this could mean the aforementioned transfer of wealth from green assets to brown assets even in Europe. This could be due to political changes inside the countries, or due to adopting to the changes in the US market. Like with the environmental score, the findings from social score dimension could indicate that investors are concerned with the high costs of being socially developed company. For example high social score could imply high employee costs in terms salary and employee benefits inside the acquirer, and during the COVID-19 when layoffs could be seen as necessary to avoid costs these could be significantly more expensive then in acquiring companies with low social scores.

Table 15. The effect of ESG rating on acquiring firms returns before and during COVID-19 pandemic using multivariate analysis with control variables – EUR sample

Dependent: CAR (-3, 3)	Model 1 (ENV)	Model 2 (SOC)	Model 3 (COG)
ENV	0.1029**		
COVID-19 x ENV	-0.2501**		
SOC		0.1352**	
COVID-19 x SOC		-0.3028*	
COG			0.0552
COVID-19 x COG			-0.3035*
COVID-19	0.2339**	0.2996**	0.2618**
CROSS	-0.0311	-0.0335	-0.0197
SHARES	0.0507	0.0522	0.0480
FRIENDLY	0.0898	0.1137	0.0686
TOEHOLD	-0.0115	-0.0176	0.0008
RELSIZE	-0.0144	-0.0140	-0.0112
LNSIZE	-0.0098	-0.0103	-0.0053
ROA	0.1754	0.2054	0.0746
DEBT	-0.0439	-0.0618	-0.0390
LEG	0.0069	-0.0053	0.0101
YEAR	-0.0030	-0.0053	-0.0022
DIV	0.0092	0.0032	0.0142
IND	-0.0007	-0.0036	-0.0020
Intercept	0.0586	0.0737	0.0336
Adjusted R^2 (%)	3.1	2.1	0.4
N	99	99	99

5.5 Summary and discussion of results

In this section we will first summarize the key study results found above. After that, we will provide our arguments and implications behind the combined findings.

5.5.1 Summary of results

In the section 5.1 we provided some visual evidence of the COVID-19 impact on market reaction in all acquisitions regardless of ESG rating. Based on this, COVID-19 has had positive effect on all acquisitions during the full sample period; the cumulative abnormal returns (CAR) have been more positive during COVID-19 period than in full sample period in all but European sample. Interestingly, in the Emerging Markets has had the most positive effect, and acquisitions in general have been met with the most positive market reaction regardless of the sample period. The last finding is that an acquisition has had a clear positive spike during the announcement day in all of the samples other than in the Emerging Markets which has seen constant positive reaction during the event window.

In the section 5.2, we conducted a univariate analysis motivated by Tampakoudis et.al (2021) and took ESG rating into consideration but excluded COVID-19 impact from the study. We divided the rating into two samples; high ESG dimension rating (75^{th} percentile) and low ESG dimension rating (25^{th} percentile). We find the low ESG scoring acquirers to constantly have better market reaction than high ESG scoring acquirers; these acquirers either experience less negative or more positive abnormal returns across all four samples. Only in the US the acquirers with high social score experience less negative returns than low scoring ones. Interestingly, in Europe the low environmental scoring acquirers experience the most positive returns and highest difference, with the median CAR differing 4.5 percentage points at the highest between the low and high environmental scoring acquirers.

In the section 5.3, we conducted a simple multivariate analysis without control variables to test the impact of COVID-19 on ESG ratings in multitude of event windows. We find some evidence of an increase in governance score affecting negatively on the market reaction during COVID-19. Social score seems to also have positive effect on some of the event windows. These findings seem to come from the US and EUR sample, with the Emerging Markets sample experiencing no significant effect during COVID-19. As the small sample size of the EM made

lead to inability to find data for the independent variables used in the next section, we exclude EM from the next section. Thus, our research on Emerging Markets ends here.

In the last section of 5.4, we also conduce a multivariate analysis, this time including independent variables to control for the market reaction. We find significant negative effect on governance score and COVID-19, consistent with findings from 5.3. Similarly, we also find slight positive effect on social score and COVID-19 that was found also in section 5.3. The most differing and significant results were found from the Europe sample; we found significant negative effect (ranging from -0.2501 and -0.3035) between all three ESG dimensions and COVID-19.

5.5.2 Discussion of results

Based on our first hypothesis, we can't find concluding argument that COVID-19 has had negative effect on ESG M&A transactions. While we find low scoring ESG acquirers to produce better cumulative abnormal returns than high scoring acquirers, the analysis did not take into consideration COVID-19 impact yet and also didn't control for other variables. The only negative ESG dimension that seem to have significant negative impact was the governance score one when controlling for other variables; we argue that this is due to the fact that acquirers with high governance score are more conservative in their risk-taking (Savari and Marcum, 2017) and thus fail to capture the potential misevaluations in the market. But as there is not clear evidence of COVID-19 having positive effect on ESG M&A transactions, and there is at least some indication of negative effect, with the governance score in All samples and negative effect in all ESG dimensions in European sample, we fail to reject our hypothesis 1.

Focusing now on the three separate datasets in US, EUR and EM, we hypothesized that European acquirers would benefit from increase in environmental score during COVID-19 period. This was due to Europe being the most developed continent in terms of environmental actions, and companies that have been preparing for the sustainable future would be valued by investors. However, our results show the opposite; low environmental score acquirers have enjoyed higher abnormal returns than high environmental score acquirers in our sample even prior to taking COVID-19 into consideration. After conducting a multivariate analysis, we find COVID-19 having negative effect (-0.2501) on increase in acquirer environmental score at 5% significance level. Due to these findings, we reject our hypothesis 3a.

We also hypothesized the Emerging Markets to witness the most negative effects of COVID-19 due to its characteristics; information asymmetry, high levels of corruption and volatility in the less developed markets (Saksiriruthai, 2019) are some of the characteristics of EM that could be seen as contributing to more negative effects of ESG M&A transactions during COVID-19 than its counterparts. This is especially due to EM being the lowest scoring dataset in our sample in terms of ESG ratings (see Table 5). Contrary to our hypothesis, we do not any significant evidence of either positive or negative effect regarding ESG M&A transactions during COVID-19. In our visual evidence of cumulative abnormal returns, we find the EM experiencing consistently positive returns in their acquisitions regardless of event window or sample period. It could be seen as that acquisitions in general are met with positive reaction in the Emerging Markets, contrary to the findings of average M&A deal being value destroying (Yaghoubi et.al., 2018). This is due to our arguments of Emerging Markets expanding their geographic reach and financial prominence through acquisitions (Sun, Peng, Ren & Yan, 2012) that investors see as value enhancing. Due to these arguments, we have to reject our hypothesis 3b.

In our motivation for this study, Tampakoudis et.al (2021) found COVID-19 having significant negative effect on ESG M&A transactions in the US. We hypothesized that this was due to the sample period selected by Tampakoudis et.al (2021); the sample period ended during July 2020, only being able to capture the market crash of COVID-19 during March 2020, and not the recovery phase accelerating during the end of July 2020 (see Figure 1). Due to our sample period having almost an entire year more of COVID-19 period, where the market has not seen similar crashes to March 2020 but rather economic development, we argued that our US sample would see less negative effect of COVID-19 than what Tampakoudis et.al (2021) found. This seems to be the case; we only find slight positive effect regarding increase in social score for acquirer during COVID-19, and not any other significant effect. Because of this, we accept our hypothesis 3c.

However, we believe the most relevant explanations for our results would be the hypothesis 2; motivated by Yen and André (2019), the cost-benefit concerns of investors, especially during times of crisis like COVID-19, are higher motivation for market reaction than CSR-related actions itself. What this means is that investors do not react to acquirers' ESG rating in itself and don't opinionate on if company should have high or low ESG rating. Influenced by shareholder theory, the investors believe that during times of crisis companies should only focus on costs

related to the main operational actions. We believe this to explain especially the results found in Europe, as Europe seems to be the most pro-ESG continent as previously discussed. However, this hypothesis is hard to prove either true or false, especially using our methodology, and thus we fail to reject the hypothesis. This hypothesis proves some limitations in our study.

5.5.3 Limitations and robustness of results

Overall, we believe our results to be quite robust for several reasons. Firstly, we conduct multiple of analyses in many event windows. However, it should be noted that our last multivariate analysis was only conducted in one event window (-3, 3), which could be seen as diminishing slightly our founding from Europe, but the visual evidence on cumulative abnormal returns (section 5.1) seems to back our findings a tad. But it should be noted that as seen in Figure 4, our sample for some reasons consists mostly of acquisitions done post market crash (April 2020 – July 2020) when investor sentiment may have been more negative, explaining the negative results found in the European sample. Other than that, we see our methodology to be clearly comprehensive for this study. Other reason for robustness is the long COVID-19 time period in our study. Contrary to Tampakoudis et.al (2021), our COVID-19 time period sees the market crash and the long recovery phase. However, as seen from Figure 3, our US sample has extremely limited amount of acquisitions done post the market crash (April 2020 – June 2020) which could explain the different results found by Tampakoudis et.al (2021). But as at the time of writing there hasn't been a similar market crash to that of March 2020, we believe our results to stay more relevant compared to future research than Tampakoudis et.al (2021). Other ways the robustness of our results could have been tested further would have been to control for significant events happening during the time period, but we believe this wouldn't have brought considerable upside for our study or its findings. Based on this, we conclude our results to be some of the more relevant ones in relation to comparable, published studies done on the subject.

6 Summary/Conclusions

This study focuses on the potential impact COVID-19 has made in the acquisition market reaction measured by acquirers' ESG rating. Prior research, limited to Tampakoudis et.al (2021) in our understanding and accessibility, has found COVID-19 to have significant negative effect on ESG M&A transactions. This result could be explained from multiple viewpoints, but we argue this especially from two points of views. Firstly, the overinvestment hypothesis argument discusses that ESG investing could have similar implications to the Internet bubble. Due to the additional risk COVID-19 provides in the market could result into transfer of wealth towards other, safer assets that would indicate overinvesting in the ESG area. Lastly, and most prominently, we argue towards shareholder theory and reasonings of Yen and André (2019). The belief is that the cost-benefit concerns of investors are larger motivation for the market reaction then the attitude towards ESG rating. What this means is that the findings in our and previous studies are not fully explained by the ESG rating aspect, diminishing the relevancy of the potential findings.

Using a global sample by obtaining US, European and Emerging Markets samples and testing them combined, we find evidence that COVID-19 has negative effect towards increase in acquirers' governance score, and slight positive effect towards social score. Testing the samples individually, we find significant negative effect in all three ESG dimensions in Europe, no significant effect in the Emerging Markets, and similar effect to that of the combined sample in the US. Quite surprisingly and opposite to our hypotheses, the most developed continent in terms of importance of ESG rating that is Europe experiences the most negative effect, while the Emerging Markets have the most neutral effect. The European results we argue prove implications about both the overinvestment hypothesis and shareholder theory. While in the Emerging Markets the results could be due to more positive reaction towards all types of acquisitions, which is backed by our visual evidence, and the higher potential to capitalize on misevaluations in the market due to its less developed and volatile characteristics. Most importantly, our findings in the US provide some arguments against the robustness of results found by Tampakoudis et.al (2021), whose sample period seems to be heavily affected only by the March 2020 market crash, and not the recovery phase and continued financial growth in the market that we are able to capture with our additional 9 months.

However, the limitations of our study and results should be noted. Firstly, large number of M&A transactions were excluded from the sample due to non-existent ESG data, leading to some possible biases especially when looking at the European 2020 sample (see Figure 4). Secondly, large number of acquisitions in the Emerging Markets had to be excluded due to the non-availability of controlling variables data, leading to complete exclusion from the last multivariate analysis. Thirdly, our last multivariate analysis is also done using only one event window, but it should be noted that the simple multivariate analysis is done using multitude of event windows. Furthermore, this study focused only on the impact of ESG regarding the wealth of acquiring shareholders, excluding the wealth generation for target shareholders.

This thesis provides new insights into the ongoing debate about the impact of CSR-related actions on M&A performance. Our global study format in this subject has not been seen prior to this, and studies using European and Emerging Markets samples have not been used to our understanding. Our results provide implications for acquirers, researchers and investors alike, among others, regarding ESG M&A transactions in multiple financial markets. European acquirers and investors may need reconsider their attitude towards ESG assets, while the previously known characteristics of Emerging Markets may be outdated, or are currently a market with exciting opportunities for local or outsider acquirers and investors. Lastly, this study should provide some more evidence and critical viewing towards published studies in COVID-19 subject field. We argue with quite confidence that using a sample period more similar to us than that of Tampakoudis et.al (2021) provides more relevant findings long-term.

We believe future studies will be made and published regarding the subject due to its timely and important nature and as the COVID-19 timeline lengthens. The robustness of our results could be further examined by conducting multivariate analyses with more event windows, or conducting a sample that does not accidentally bias towards single quarter like ours seemed to do especially in the European 2020 sample. Additionally, due to their cross-border characteristic, more detailed analysis for cross-border deals similarly to Yen and André (2019) could be conducted inside European markets and Emerging Markets. Additionally, future research could focus on the market reaction of listed target firms' investors. It could also be questioned if the ESG rating provides the most relevant viewpoint by itself due to the shareholder theory, and maybe conduct a study where ESG rating is only one of the many main variables that could be affected by cost-benefit concerns of investors. This could shed more light towards investors shifting to shareholder theory in times of crisis.

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